Concept Note

Ad hoc expert group meeting (EGM)

on the Use of Mobile Devices for Data Collection

8 December 2014 to 9 December 2014

Organized so far by

African Union Commission(AUC)and the United Nation Economic commission for Africa

(UNECA) (Data Technology and Geo-information and Sectoral Statistics Sections)

StatCom/CoDG:

Agriculture and food security in Africa, GGIM-Africa: Making Statistics and Maps Count

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Tunis, Tunisia

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1. Background and justification

Why mobile devices in data collection?

Statistical Offices in Africa over the years have used papers for data collection. Mobile devices are advantageous,due to the standard formatting of questionnaires functionalities that enables thefitting of questionnairesinto mobile or tablet screens. Although these devices require using software tools thatmake it difficult for collaboration with other partners they have the benefit over paper questionnaires as they can be easily tested after deployingthe mobile-devices in the field(Tao, 1990)[1]. It has been noticed that typing through keypad orkeyboard can be slow but as users manipulate these devicesover time in the data collection process their speedperformance increases significantly. Equally, many language inputs required duringdata collection can be programmed into these devices making it easier to interview using local and international languages (Elias, 2001)[2].

Mobile devices can be easily deployed remotely making logistics easier. Survey workcan be tracked in real time thereby facilitating the monitoring and evaluation of the data during the collection process. These devices make it easier to change the questionnaires if there is a necessity. The pattern of logical questions flow makes it easier to input data into the mobile devices, therefore facilitates the applicability ofthe questionnaires. Validation checks for answers entered can be programmed into these devices, prompting enumerators if answers do not match 'pre-filled' to move to the previous data, this greatly save time in the field. Validation checks permits for some data cleaning to be completed in the field due to the fact that these features are already built into the software. Real-time data checking allows for prompt review of data quality and makes auditing and respondent tracking procedures more feasible (De Donatis, et al., 2008) [3].

The initial one-time cost of mobile or tablet devices is high and additional costs for maintenance such as batteries and replacement due to loss of devices can be acquired initially but the devices can be adapted to be used for future data collection exercises making the cost to be cheap in the long run. Real-time access to data tomonitor quality and progress is easier with mobile devices equally they are environmentally friendly asprinting surveys is avoided (Wang et al.,2001)[4]. Devices can be linked with othermultimedia components such as Global Positioning System(GPS), audio,and video tools. Non-text data can be integratedwith text data in real time. Real-time access to location, photos, etc., provide can collecttext as well as tieverification (BaiTian et al., 2012) [5].

A mobile device software for collecting data should posses an operating system that is compatible with other devices. The usability as well as the questionnaire type should be determined before choosing or developing the software. The formatting and organization as well as the logical functions of the device should be carefully determined in the choice of the software. Other aspects to be considered are deployment and storage capacity, language support and user management functionalities (Gao, 2002)[6]. The main data aggregation functions to be considered are: i) hardware (web-server) or desktop; ii) device setup time; iii) set-up cost; iii) on-going cost; iv) data security and v) data sharing and access (Chen et al. 2013)[7].

New data types

New data types that are integrated into mobile devices have emerged. These data include: i) geographic data dealing with location, paths and boundaries; ii) multimedia data consisting of photos, audio, recordings, videos etc. and iii) electronic sensors made-up for instance of finger prints, scanners, health sensors, smart cards and readers. With smart mobile devices such as phones and tablets, you can capture geographic data consisting of latitude, longitude and altitude of a point, a path or a boundary. With these three data types, one can abstract additional indicators using GIS software to enhance the data analysis. Locations and verifications functionalities enables the mapping of location, path, area or boundary to a geographical region like location of surveyors at time of launching a survey let us say on a district level map; boundaries of a farmer's land; administrative boundaries of a district, and so on. Prevalence and density functionalities in mobile devices facilitate the identification of certain activities or entities within a geographical boundary, for example the number of pharmacies in a slum neighborhood; forest-cover (density) per square kilometer (Bugs et al. 2010)[8].

Equally the areas or physical spaces occupied by certain structures, or activities, like average land area of schools in ruralversus urban; area of agricultural land encroaching forest land can be loaded into these devices.. Networks functionalities help inidentifying and quantifying connectivity, for instance, the duration and distance of time between the first reported cases of Ebola; measuring road connectivity and density in terms of total length and crossings.Changes and progression over time in (or between) a given location or region like rural-urban migration during the year; progression of students from primary school to university, vis-à-vis, location, etc are determined by certain mobile devices (Abdallaet al. 2010)[9].

Multimedia data used in mobile devices include aspects such as: photographs, audio recordings and videos provide rich qualitative data for monitoring and evaluation activities. Smart mobile devices using built-in components like cameras and microphones can capture this data easily. Multimedia data can also be used for audit and verification purposes (Chien et al.2005)[10].

Electronic sensors are used in mobile devices such as smart phones and tablets have built-in sensors such as accelerometers, microphones (can be used for measuring decibel level) or light sensors. These devices can be further enhanced by external add-ons such as fingerprint scanners, card-readers, motion detectors, or air-quality sensors. With these kinds of sensors, monitoring and evaluation activities need not to be limited to data collection through human intervention; rather lot of remote conditions and events can be measured by sensors and collected via mobile devices to better monitoring efforts (Cherling et al,.2004)[11].

Within its framework and mandate to promote Africa's sustainable development, ECA is committed to assist member States to build their statistical capacities as well as strengthened the National Statistical Systems (NSS) through enhancing the National Strategies for the Development of Statistics (NSDS). In this regard, ECAin collaboration with its development partners,is implementing a major project to leverage mobile devices as a new innovative and transformative tool in data collection aimed at assisting the member states in producing and disseminating quality data for socio-economic development. This initiative is motivated by the

advantages of mobile devices over traditional survey methods in data collection expressed in terms of efficiency (in sense of cost and time) and effectiveness (in sense of data quality) which in turn represent the main objectives of mobile devices systems such as the Computer Assisted Personal Interviewing (CAPI) approach in data collection, data processing and data dissemination.

This Ad hoc Expert Group Meeting (EGM) will contribute in enhancing a working document based on the recommendations and lessons learned from African experiences in introducing mobile devices in data collection as documented for instance in the recent regional workshop under the main theme "On the use of Mobile Technology inData Collection and Statistical Production in Africa''held last March 2014 I Praia, Cape Verde. Since no guidelines are so far exist to be adopted by African countries to assist them in the best way to implement this new tool of data collection, the outcome of this EGM is expected to feed into the best lessons learned on the ongoing five plus one (Ethiopia) pilot studies, with the ultimate aim to have a comprehensive document that will guide the implementation of mobile devices in data collection and statistical production in the member states of the region.

2. Main Purpose and Objectives of the Expert Group Meeting

Given that mobile devices in data collection can improve the efficiency in terms of cost and time as well as enhance the quality of data as compared to traditional methods, the purpose of the Ad hoc Expert Group Meeting (EGM) is to recommend on the selection and use of the appropriate mobile device hardware, software, service providers, type of technology, data transmission modes, data security and quality, aggregation and analysis for data collection by countries in Africa.

Specific Objectives:

- Determine mobile devices hardware and add-on devices for data collection;
- Establish the adaptability of data collection softwares;
- Evaluate the data transmission modes adequate for the collected data;
- Investigate into procedures for receiving, collating and analyzing data thereby prompting data aggregation and data analysis through the use of mobile devices;
- Selecting the right technology service provider and mobile device technology and
- Determine the mechanisms for ensuring data security and quality

Arising from these objectives the following specific issues:

Specific issues:

(i) Purpose of the use of mobile devices to fully automate data collection with emphasis in geo-referenced data; (data quality; coverage, reliability and timely data);

(ii) The feasibility and conformity of the chosen device, the desirable features of the app and the available resources that is the need to balance between resources and the choice of technology when planning to conduct a survey;

(iii) The ranking of sectors that received priorities to pilot them in data collection using this new tool in line with the national strategies;

(iv) How to address the connectivity, network coverage that enables phone orany other mobile surveying equipment to be used, the majorchallenges/ obstacles to deployment, particularly in remote areas must be tackled;

(v) How to view this new tool in the short and medium terms as a complementary rather than a substitute to the existing traditional methods of data collection in Africa, thus the new tool can be integrated into the structure of NSS and NSDS;

(vi) How to address/tackle the logistical and other practical challenges, particularly with regards to remote areas and the design of the survey;

(vii) Issues of data security and data privacy and confidentiality, for instance to ensure no record is retained in phone memory. Is it feasible to establish of charter or Standard Operating Procedures (SOPs)for the exchange and saving of data. In this respect how to incorporate Principles of data quality, patricianly (Efficiency in the sense of having logical checks to ensure correctness and consistency of the data collected; Accessibility in a sense of having instant digitalization and access via the internet and Ease of Use for enumerators (data reporters);

(viii) How this tool in general can enhance data quality, particularly as well as enlarge the data set of official statistics to meet user acceptance and particularly decision makers;

(ix) Validation: For instance to have inbuilt logical checks to ensure clean data for instance to ensure the identity of the reporter (user name password);

Data processing: including upload, download and data export into other formats and data disseminan.

The scope of the guidelines of using mobile devices for data collection

The framework of the proposed working document will be based on best practice and lessons learned from deploying mobile technology for data collection. This study will attempt to outlines the areas for the main generic guidelines for the use of mobile device in data collection. More specifically, the working document will attempt to consider the need for guidelines pertaining to several issues in data collection not necessarily all centered around or restricted to challenges and opportunities. The developed guidelines may be organized into two main categories. The first category in which the guidelines may be applicable regardless the method used to collect data. In this category the Fundamental Principles of Official Statistics, already adopted by the United Nations Statistical Commission that will be of practical value if data need to be collected by mobile devices. The second category will attempt to collect guidelines that strictly addressing this new tool in data collection.

3. Brief literature review and basic concepts

Africa's Experiences in using mobile devices for data collection

Most, if not all countries have used digital devices for data collection. For instance, Cape Verde used personal data assistants (PDAs) for its latest population and housing census (PHC) in 2010 which was the first full digital census in the whole of Africa and extended their use to other surveys in the country, for instance by using CAPI-IMC application to produce and to disseminate quarterly reports on employment. Sao Tome and Principe has followed the Cape Verde experience for its census. Technical support for the developments in Cape Verde came

from Brazil, where the Institute for Geography and Statistics has implemented different methodological and technological innovations, among which can be mentioned the use of handheld computers equipped with GPS for data collection and using the Internet for questionnaire completion.

Senegal used PDAs for conducting the census of Population, Agriculture and Livestock. Earlier pilot studies in Senegal using mobile phone include a survey in maternal health in 2008 and a survey in preventive health conducted in 2009. Botswana has conducted several surveys using PDAs including the Youth Risk Behavioral Surveillance Survey. Following the experience of Cape Verde, Senegal and Botswana in using mobile technologies (PDA) in data and due to the direct benefits in terms of saving time, reducing cost and enhancing the quality results, Côte d'Ivoire has adopted this process for their census. Gabon conducted its General Census of Population and Housing (RGPL 2013) where the pilot census was held in August 2013. Considering CAPI as a method of data collection, Morocco produces quarterly reports on employment. Malawi conducted household surveys using PDAs. Cameroon has collected data using CAPI surveys since 2010 including the survey for the Fourth Cameroon household (ECAM4). A pilot study was conducted in 2008 for direct data capturing in a large community-based geo-referenced survey in rural Burkina Faso

Nigeria has used a variety of mobile devices, including PDA, CAPI, GPS /Google Tech. to collect data in various sectors including Monthly Prices; Household Panel Survey; MDG baseline survey; National Agricultural Sample Survey; National Census of Commercial and Industrial Businesses and Global Adult Tobacco survey. The experience of Nigeria in addition to other benefits of mobile devices has illustrated that the use of CAPI improves monitoring and evaluation of data collection process with the introduction of GPS coordinate capture of data submission. . Togo by using CAPI approach conducted a mobile phone survey to collect data on living conditions of households. The application covered a sample of 560 households1. Benin used CAPI methods in several sectors including, household survey, employment and microfinance (CAPI for EMIC 2011),

In 2012, Kenya started piloting a mobile application for data collection and monitoring of MDG's achievement. Each of Sierra Leone and Somalia used mobile phone to conduct a survey to collect data on Vital Statistics in 2011. Tanzania used PDAs for data collection in two pilot surveys; The National Panel Survey in 2009/10 and Feed the Future (FtF) survey in 2010. Tanzania has also used smart phone in data collection jointly by NBS and Ipsos in Financial Scoping Survey – FinScope in 2013.2). Uganda has collected data using mobile surveys in several sectors including Community Information System (CIS) which is a Government programme aimed at generating basic information from communities to monitor household welfare as well as promoting effective utilization of information at the grass root.South Sudan has conducted high Frequency survey in 2012.. The survey used Android based tablet computers to collect data on several sectors including social, economic conditions in the country (Praydz, 2013)[12]. Burundi has used several mobile devices in data collection including GPS for geo-referenced coordinates and PDA for information on food security; smart phones (Android) in the Third Demographic and Health Survey, EDSB-III, 2014-2015 and the country is planning to use

[1] This application has also been used in Djibouti andMorocco, while Burkina Faso,Mali, Niger are in the processof adoptingthis technology; source: Enquête par Téléphonie Mobile (ETM) via la technologie CAPI de la BanqueMondiale (cas du Togo), a presentationby the GeneralDirectorate of StatisticsandNational Accounts at Cape Verde regional workshop March2014

[2] This application has also been used in: Kenya, Uganda, Nigeria, Ghana, Mozambique, Zambia, Angola

PDA in the next Census of Population and Habitat coupled with the Agricultural and Livestock Census in 2018.

South Africa implemented pilot projects in using mobile phone for data dissemination since 2002 where the University of Pretoria used mobile phone for academic support to students. In 2006 South Africa used PDA and smartphones n data collection (WFP Survey) followed by the Dwelling Frame (DF) project in 2007. However, South Africa conducted research and consultation,, created focus groups, and identified appropriate tools mainly in 2011, followed by piloting the app and campaigning for the end user awareness since 2012 and replicating the solution to others government departments and examining end user feedback since 20133.. The ministry of health in Zambia conducted mobile surveys to collect data in infant health in 2009 with Project Mwana Piloted in 2010 and a survey in public health in 2012 (WHO, UNICEF)

FAO developed a FENIX-based Food Market Price Data Collection System Using Smart phones. Jamaica has developed an electronic data collection system called "eDaCS" which utilizes portable and mobile devices to collect data. By utilizing this system the Jamaica Statistical Office replaced the paper based operation which results in the delivery of more timely data and information, improving the quality of data and information, reduction in cost of survey. Africa Rice Centre has conducted pilot exercises on rice data collection using questionnaires and tools loaded on Ipad and other mobile devices. Additional lesson from the Africa Rice example is the emphasis on using researchers based in local universities for much of the methodological work that ensure sustainability.

To ensure ownership and successful usage of the proposed guidelines, there is the necessity for deliberation and sound review of the guidelines by a Group of Expert in an Ad hoc meeting. Deliberately, the working document will consider the most lessons and good practices as documented in the literature of statistical data collection for most of African countries that addresses the key conceptual issues include; capacity building (training), infrastructure (network coverage, energy / electricity), particularly in remote area, optimizing or matching the choice of the technology with the resources and the sectors that should receive the priority at the pilot stage in using this new tool of data collection in line with the NSD

Choice between mobile devices

Mobile Device, hand held device or handhelds refers to the equipment used by end user to access mobile services via a mobile network. These devices include: i) Basic phone that offers basic voice services (telephony/voice mail), SMS and USSD based services; ii) Basic phone features that includes internet enabled, supports transmission of picture messages, downloading music, built-in camera; iii) smart phone with graphical interface features such as touch screen capability, built-in Wi-Fi and GPS (global positioning system); iv) tablet smart phone with features such as larger screen increased computing power, front and rear facing cameras, additional ports (e.g. USB) and Laptops preferably of practical size to carry and operate on the field.

The Computer assisted personal interviewing (CAPI) or briefly Computer assisted interviewing (CAI), is a broad term for a set of survey technologies with electronic forms on tablets, smart phones, mobile phones or computers. Due to their advantages over traditional methods of conducting surveys (as measured in terms of efficiency and effectiveness), CAI

[3] Using Mobile technology in Statistical Production: South Africa's Case Study, Praia, Cape Verde, March 2014

methods are increasingly replacing the traditional surveys of pen-and paper interviews (PAPI) methods. The CAPI as an innovative method or an approach of data collection using electronic form can be classified into three categories; (i) traditional CAPI using computer or personal digital assistant (PDA) devices; (ii) simplified CAPI using simple mobile phones, which could be referred to as mobile assisted personal interviewing or "MAPI", which uses java applications that can run on very simple phones; and (iii) CAPI using smart phones or table computers which have a data connection (internet).

Personal Phone Surveys can be conducted by using Computer-assisted telephone interviewing (CATI) which is an alternative data collection approach. For Automated phone surveys, the interactive voice response (IVR) approach can be used. Mobile Text can serve to conduct (SMS/USSD) surveys. For Web surveys the Computer-assisted website interviewing (CAWI) approach can be use. Where large-scale datasets of 'digital traces' are available, then the big data approach can be quite relevant to create indicators and statistics The working document will attempt to link the purpose of the use of mobile devices to fully automate data collection with the chosen device subject to the resource availability. However, an emphasis will be in geo-referenced data; to secure (data quality; coverage, reliability and timely data). On other words although, several devices exist in the market with geospatial applications but it is important to determine their functionalities in aspects such as accuracy, affordability, data storage and transfer and format of transfer etc. The agreed international standards especially concerning the Meta data should be determined. Equally, the analytical component of the data collected should be considered with priorities being laid on data required for immediate decision making. The collected data should confirm with the specifications of the Spatial Data Infrastructure of the countries.

Choice between competing Models

The choice between the mobile devices used in data collection directly need to be related to the software to be used for programming or the app desin that addresses how to create the databases, tables, fields and indexes. This is in turn has to be seen within the architecture or the model used to collect data. Model is the abstraction of some aspects of the reality. Given the chosen model there are commonly 3 or 4 levels of responsibility in the computer assisted interview (CAPI) as displayed in Table 1

Table 1: Main roles of players in mobile data collectionLevel	Some main responsibilities
Central coordination	• Administrative, technical and logistical organizations • Elaboration of survey tools such as methodology, manuals, protocols and questionnaires • Supervision of activities at all others levels

IT-team	• Designing and implementing data entry and quality control applications, databases and other needed applications. • Configures the mobile devices and ensure the effectiveness of all needed connections • Load questionnaire on mobile devices • Centralize, consolidate and manage data • Perform quality control and return listing errors to teams leader • Provide remote and on field support
Team leader or field supervisor	• Link between enumerators and central office (IT-team and central coordination) • Schedule and assign sample to enumerators • Ensuring that data are collected according to the protocol adopted and are highest quality • Collect and aggregate data from mobile devices • Perform quality control • Upload aggregated data to central database • Providing assistance with problems including technical, equipmentand field problems
Enumerator	• Conduct interviews and data collection • Upload data collected to supervisor database • Corrected the errors identified by the team leader and those of the central level

Note: This hierarchical organization is not rigid and can be adapted according to the type of survey, the number of enumerators and others parameters. However, all responsibilities mentioned here should be visible in adopted organization.

Data quality, quality assurance, quality control and data security

Data quality is a multi-dimensional concept and is commonly described as the degree to which data are "fit for use". Data quality is ensured when it can be demonstrated that the datasets are relevant, complete, consistent, reliable, current, accurate and objective. Quality Control (QC) is defined as a system of routine technical activities to be conducted by a designated national authority (DNA) to assess and maintain the quality of the datasets as the data are being compiled, while Quality Assurance (QA) is a system developed by a DNA to ensure that the QC system is designed to meet the data quality objectives andother provisions4.

Data Security on the other hand Deals with procedures to ensure total privacy, security and confidentiality. Both IT security and quality assurance are concerned with removing risks,

[4] For these provisions see Annex 49: GUIDELINES FOR QUALITY ASSURANCE AND QUALITY CONTROL OF DATA USED IN THE ESTABLISHMENT OF STANDARDIZED BASELINES; http://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid46.pdf

while IT security teams work to remove security risks quality assurance teams work to remove risks to quality. So in addition to (Principles of data quality of the IMF already adopted by UN) which are intended to guide the implementation of the Quality assurance (QA) and Quality Control (QC) procedures, for instance, the principle of Efficiency in the sense of having logical checks to ensure correctness and consistency of the data collected; or the principle of Accessibility in a sense of having instant digitalization and access via the internet and the principle of Ease of Use for enumerator, the working document will deal with measures to ensure confidentiality (from risk of mitigation; ensure Encryption, training, configure devices) and measures against security risks (Frequent Backups – flash drive, remote office, Head Office, Battery life of devices; procurement costs.

Data quality is enhanced when you can control or automate the flow of questions and data-entry process on a device. This makes data collection Apps on smart phones or tablets, Interactive Voice Response (IVR) systems (with digital sensors such as Smart-card readers) more accurate than Short Message Service (SMS) entry on low-end phones. Data security is important for the sanctity of your operations, your stakeholders and your research participants. Your data may contain Personally Identifiable Information (PII) (information that can be used to uniquely identify, or locate a single person) and other sensitive data such as financial or medical information or both which should be kept private and inaccessible to most users of the mobile data collection system (Aanensen, 2009) [13].

Data Compilation and Implementation Issues

The Data collected although represents the milestone activity for statistical products, however at this stage it will only be a raw data though some validation checks may be perform during data entry. Next, after data has been processed including upload, download and data export into other formats, this raw data need to be compiled which include the subsequent steps of data compilation (e.g. data editing, imputation, weighting, adjustment).The working document will attempt to address the guidelines to regulate the activities in each of these steps.

Recognizing the socio-economic differences between countries, however there is a common framework on which the proposed generic guidelines may be applicable and useful to each country despite the variation. Thus, the working document may consider the outcome of the ongoing pilot studies on the use of mobile technologies in data collection, to enhance the implementation of the guidelines.

GIS and Data Collection

Using Geographic Information System (GIS) for data collection targets and gathers structured information using devices such as smartphones, PDAs, or tablets. With the continuous improvements of earth-observation and web mapping techniques, the increasing use of new

sources of geo-information based on new mobile technologies has emerged. Devices allowing geo-localization of data has increased as a result, an abundance of mobile data collection applications and initiatives have appeared in the continent. Mobile GIS data collection systems can run designed surveys which collect specific information from a targeted audience.

Choosing the most appropriate GIS technology application strategy for a specific data collection exercise and communication environment remains a difficult task for most users, for the following reasons: i) difficulty in identifying the appropriate mobile data collection system to fit the multiplicity of operational contexts in which the data collection process covers; ii) keeping track of the evolution of a very dynamic GIS sector with the constant evolution of new technologies flourishing on the data collection market; iii) poses challenges derived from the storing huge volumes and transferring of data, as well as ensuring quality, accuracy, and reliability of the data; iv) Geographic Positioning System (GPS) handheld navigation devices are commonly used for data collection, these devices have location errors that hinders the accurate identification and location of features on the ground, this problem can be corrected with GPS augmentation systems but these systems are expensive and needs a lot of training to effective use them; v) most of the devices are not adapted to collect huge amount of information like the questionnaires from surveys and censuses.

The following parameters can be followed in selecting a GIS device for data collection: i) Form features (support for features like mandatory questions, skip patterns, and multiple languages); ii) Synchronization method and storage capabilities; iii) interoperability and connectivity (export formats and database details); iv) hardware requirements and capabilities supported (device, desktop, and server operating systems; device features, like GPS, photos, etc.); v) system features and platform characteristics (open or closed source; user friendliness; methods for reviewing data) and visualization and analysis features, for the device and with a visualization component (import/export formats; graphs and charts; reporting features, etc.)

4. Activities

i) Zero working document prepared for discussion
ii) Experts provide comments on the working document
And iii) Revising the working document to incorporate feedback from EGM

5. Expected Outcomes and Outputs

Short Term

- Determine the Mobile device range that can be used for data collection purposes. Establish the Add-on devices that can be linked to Mobile devices such as smart phones, Bio-metric sensors, bar-code readers, record data such as finger prints, inventory tags, Smart Cards, etc.
- Establish the control mechanisms of entering data into the device based on programmed formats and rules. Data collection software is mainly required for smart phones, tablets and notebooks, and it tends to be specific to the type of hardware device like Android phones, Windows Notebook, among others. In some cases the software is built-in with

the hardware. Data collection software can be: (a) custom built; (b) licensed; or (c) subscribed to as a service platform.

- Propose the suited transmission or transfer mechanism for field-level data to a remote location or a single central computer.Mobile networks allow data collected in the field to be transmitted through SMS, voice, mobile-internet, etc. With certain devicesdata is transferred physically by hot-syncing cables.
- Investigate the suited mechanisms for receiving, collating and analyzing data. This can be done remotely through SMS, mobile-internet gateways on web-servers with online databases, or through local hot-syncing on local computers using spread-sheet, database or statistical software.
- The criteria for selecting the right technology service providerand mobile device technology should be elaborated for application by member states.
- Equally, member states should determine the mechanisms for ensuring data security and quality

Long Term

- Integrate the results of the EGM in the proposed Guidelines for use of mobile devices for data collection
- Member States integrate and use these findings or results of the EGM to enhance the collection of data using mobile devices in their statistical systems.
- Member States will take informed decisions in real-time and providing feedback and exchanging information between stakeholders in real-time.
- Guidelines disseminated and used for decision making

6. Organization of the Meeting

The Meeting is expected to attract other partners and may be jointly organized by ECA, and its development partners the African Development Bank (AfDB); Africa Union Commission, (AUC); PARIS21 in addition to the hosting country, for instance since this EGM is planned to be a pre event between 8-9 of December 2014 ahead of StatCom- Africa meeting, to be held in Tunisia, then The National Institute of Statistics of Tunisia is expected to be a partner in organizing this meeting.

7. Participants

This meeting brings together in addition to the expert group from Africa and international organizations including United Nations Statistics Division (UNSD), Capacity building Department in UN DESA, other UN agencies, National statistical Offices (NSOs), National Training and research Institutes (NTRIs), other technical and financial partners with special interest on the meeting theme, including African member States, policy makers, Non-governmental Organizations (NGOs), private sector (including mobile device operators), the civil society, and other development partners including the media

8. Working Language

The presentations and deliberations can be either in English or French with simultaneous interpretation.

9. The Budget (Funding)

1. The estimated budget to run this function is $ XXX under Regular budget/

10. Proceeding of the Meeting

Agenda

11. The way forward

Finalize and release the document on guidelines to the NSOs or the statistical authority in charge of the NSS and or NSDS in all African countries.

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