



Ministry of Education & Sports  
**EMIS Strengthening Program**  
**Focus on GIS**  
**Presentation to GEO Working**  
**Group**

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*Academy for Educational Development*



# Project background

## ➤ Public/Private Partnership

- USAID - Finance & Implement EMIS Program. Chose AED as its IP.
- Microsoft Corporation: PIL Training Program in Universities, UTCs and Primary Teacher Colleges to strengthen use of ICT in delivery of education
- MOES – program leadership

## ➤ *Goals*

- Reorient EMIS toward local government, communities and parents as its principal clients
- Improve capacity to use information at HO and local levels
- Increase local demand for information



# Project Objectives

- Strengthen EMIS at MOES HQ
  - Address data quality weaknesses in ASC
  - Strengthen production and use of EMIS data
- Roll-out DEMIS to 20 Districts
- Integrated (D)EMIS/ GIS Solution
- Establish PIL Program to strengthen use of ICT in delivery of education



# Project Ingredients

- Integrated (D)EMIS – GIS software
  - ...undertaken by Agile Learning Corp.
- New EMIS/DEMIS Hardware
- Training in ICT skills, use of EMIS/DEMIS
- Use of Smart phone technology for GPS coordinates of schools



# GPS coordinates of Schools

- Existing sources
  - GPS coordinates obtained by MOES in 2004, but not carried forward to current EMIS database
  - UBOS carrying out updates in advance of 2012 Census (covering all sectors)
- Approach to obtaining GPS coordinates for all schools
  - Matching existing sources to 2009 EMIS database
  - Fieldwork to obtain coordinates of non-match cases



# GPS coordinates of Schools Matching of 2009 and 2004 EMIS school lists

- EMIS number not a unique identifier
  - Computerized match based on standardized school and district/ parish names
  - Residual manual match
  - Obtained about 19,000 match cases



# GPS coordinates of Schools Matching of 2009 and UBOS 2012 updates

- Added only a handful of cases
  - UBIS data often did not have the detailed school name



# GPS coordinates of Schools Field Work for non-match cases

- Used Nokia C5 Smart Phone
- Development of application by Satelife, an affiliate of AED
- UCH was the local partner of Sateliffe to provide on the ground support



# GPS coordinates of Schools Smart Phone |Application on Nokia C5

- A list of schools by county needing GPS coordinates was pre-loaded
- Select an existing school using a drill down menu, or add a new school
- Once school selected, take a photo and the GPS coordinates
- Send to a server or if network problems save and send later



# GPS coordinates of Schools Operations

- Field work was carried out by County Inspectors
- Step 1 AED and MoES Regional Coordinators trained the County Inspectors and gave them an advance to cover expenses
- Step 2 QA- AED and MOES teams observed the work in progress
- Step 3 – Follow-up meeting – County Inspectors returned their phones and manual backups
- Field work from Mid August to end of December 2010



# GPS coordinates of Schools Issues with Application and Operations

- Early versions of the application had problems, especially in sending of data – resulted in some lost data
- Manual back ups not always kept comprehensively
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# GPS coordinates of Schools Editing and Matching to 2010 EMIS Database

- Data entry of manual back-ups in cases where C5 data was missing
- The goal posts had changed – had to match the results back to the 2010 EMIS database , which had substantial changes from the 2009 DB due to an extensive clean –up undertaken when the new EMIS was introduced.
- Meant a combination of automated and manual matching
- Took more time than the field work – completed



# GPS coordinates of Schools Quality Assurance

- Comparison of the District, county, sub-county, and parish designation in EMIS database, versus that based on the GPS coordinates
- Found that 95% of records matched at the District and county levels
- Those records were deemed to be of acceptable accuracy



# GPS coordinates of Schools

## Next Steps

- Add GPS coordinates to EMIS database
- Add new boundary files
- Add features – roads, lake and rivers
- Creation of District files for uploading into DEMIS
- Production and dissemination of high quality maps of key education indicators



# GPS coordinates of Schools

## Next steps continued

- Training of MoES personnel in use of GIS for education planning purpose
- Training of MoES personnel in use and maintenance of GIS features of (D)EMIS
- Development of ongoing GPS updating strategy



# GPS coordinates of Schools Observations/ Lessons learned

- Unique Identifier
  - EMIS number is supposed to be a unique identifier. Make it so. Lack of a unique identifier made matching work very time consuming and incomplete



# GPS coordinates of Schools

## Observations/ Lessons learned

- Census Updating
  - Consider conditional updating – eg for education start with the MOES school list and update it
  - Consider Smartphone technology as compared to current paper approach.



Thank You

