

Strengthening Education Management Information Systems (EMIS) and Data for Increased Resilience to Crisis

COUNTRY CASE STUDY: UGANDA

Background document

The ‘Strengthening Education Management and Information Systems (EMIS) and Data for Increased Resilience to Crises’ initiative responds to the need for accurate and relevant education data and evidence in crisis contexts. UNESCO, in partnership with NORCAP and supported by Education Cannot Wait and SIDA, has conducted country case studies in Chad, Ethiopia, Uganda, Palestine, South Sudan and Syria to analyse recurring data challenges in crisis situations in the framework of the initiative.

This document was commissioned by UNESCO and is part of the collection of six country case studies carried out. The views and opinions expressed in this paper are those of the author and should not be attributed to UNESCO.

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Acronyms

ADEA	Association for the Development of Education in Africa
ASC	Annual School Census
AU	African Union
CAPI	Computer Assisted Personal Interview
CESA	Continental Education Strategy for Africa
CSE	Conflict Sensitive Education
CsPro	Census and Survey Processing System
DRC	Democratic Republic of the Congo
DEMIS	District Education Management Information System
DEO	District Education Office
DFID	Department for International Development
DIS	District Inspector of Schools
ECW	Education Cannot Wait
EDPs	Education Development Partners
EiE	Education in Emergencies
EIEWG	Education in Emergencies Working Group
EMIS	Education Management Information System
ERP	Education Response Plan
ESSP	Education Sector Strategic Plan
FGD	Focus Group Discussion
GER	Gross Enrolment Rate
GIS	Geographic Information System
GPS	Geographical Positioning System
IM	Information Management
KII	Key Informant Interview
M&E	Monitoring and Evaluation
MoES	Ministry of Education and Sports
MOFPED	Ministry of Finance, Planning and Economic Development
NER	Net Enrolment Rate
NIRA	National Identification and Registration Authority

NGO	Non-Governmental Organization
OPM	Office of the Prime Minister
PSS	Psychosocial Support
PTA	Parent Teacher Association
RTRR	Reporting, Tracking, Referral and Response
SDG	Sustainable Development Goal
TMIS	Teacher Management Information System
UBOS	Uganda Bureau of Statistics
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEB	Uganda National Examinations Board
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children’s Fund
UBTEB	Uganda Business and Technical Examinations Board
WB	World Bank

Background

The case study was one of six¹ aimed at analysing current EMIS and recurring challenges related to the use and management of education data and information at the country level in times of emergencies. The study seeks to understand the information currently gathered through EMIS and other systems/actors and to examine its utility to development and humanitarian actors.² Recommendations are suggested that could strengthen the collection and analysis of crisis-sensitive data including potential remedial actions to address identified gaps.

Methodology

The case study was developed over a three-month period that included a six-week deployment to Uganda followed by a two-day workshop³ in Paris with the other UNESCO EMIS research officers working on this project, as well as UNESCO HQ EiE and EMIS specialists.

The theoretical underpinning for the case study was based on EMIS evaluation tools developed by the World Bank,⁴ the East African Community (EAC)⁵ and UNESCO. In addition, the Inter-agency Network for Education in Emergencies (INEE) Minimum Standards were used as the basic framework for understanding and articulation of education in emergencies (EiE) data.

1. A desk review of 17 key documents was undertaken⁶ and this formed a foundation for the case study terms of (i) a theoretical basis for evaluating an EMIS, (ii) the history and functionality of the Ugandan EMIS (and Annual School Census) and the outcomes from recent reviews of the system and (iii) education response plans for refugees and host communities.
2. Eighteen individual interviews were conducted during the six-week mission including with:
 - MoES representatives, including deputy commissioners and members of the statistics staff
 - Staff from the ERP Secretariat based within the MoES
 - Members of the UNESCO National Commission
 - DEO officials in Arua and Yumbe
 - Members and project staff from the Education Development Partners Group, including the World Bank, DFID and UNICEF

¹ The case studies were undertaken in Chad, Ethiopia, Palestine, South Sudan, Syria and Uganda.

² For the purpose of this study, when referring to humanitarian and development actors, this includes relevant government ministries and departments – including the primary actors, the Ministry of Education and Sports (MoES) and the Office of the Prime Minister (OPM), the government body mandated to coordinate the refugee response.

³ Held 7 – 8 November 2019.

⁴ 'Education Management Information Systems - Resources & Tools', <http://saber.worldbank.org/index.cfm?indx=8&pd=2&sub=4> (Accessed 22 June 2020.)

⁵ ADEA Working Group on Education Management and Policy Support for the EAC Secretariat. 2013. *The East African Community (EAC) Regional Capacity Building Strategy for EMIS*.

http://www.adeanet.org/sites/default/files/eac_emis_capacity_building_strategy_2013_0.pdf

⁶ A selected bibliography is provided at the end of this case study.

- Members of the EiEWG, including co-leads UNHCR and Finn Church Aid in Kampala, Arua and Yumbe
 - Staff from the UBOS.
3. Several data collection tools and assessment tools/methodologies from UNHCR partner agencies were collected and reviewed.
 4. Interviews with two education development partners were conducted with a specific focus on SMS data collection tools.

The findings were synthesized based on an analytical framework developed collectively by the project team during the two-day workshop in Paris.

Executive summary

The current data landscape

Education sector information requirements in Uganda are primarily driven by the needs of users that fall into three main categories: the Ugandan Government, Education in Emergencies (EiE) partners and education development partners. Firstly, data are collected, analysed and used by various government systems, both within the MoES (including the EMIS) and other government agencies such as the Uganda Bureau of Statistics (UBOS) and the Uganda National Examinations Board (UNEb); data are also collected at district level by the District Education Offices (DEOs). Secondly UNHCR, working with the Office of the Prime Minister (OPM), oversees the collection of education data in support of the refugee response. Finally, education development partners, including UNICEF and DFID, are pioneering education data collection and monitoring projects.

The current EMIS has not been updated since 2017 as it relies almost entirely on data from the Annual School Census (ASC), which was discontinued in 2017.⁷ Work is in progress to restart the ASC and subsequently design and implement a new EMIS. It is expected that (initially) the dataset for the 2020 ASC will be similar to the former ASC and, as such, will allow for fairly comprehensive analysis of the education sector in Uganda. Data are gender-disaggregated and include information on the age of students in each class, children with disabilities, transition rates as well as staffing, infrastructure and materials. Combined with education exam results⁸ and population data,⁹ this gives reasonable information on enrolment rates, student dropout and learning outcomes. In addition, other initiatives such as the launch of a Teacher Management Information System (TMIS) are being used to fill the gap left by the lack of current EMIS data. There was little explicit crisis-sensitive data collection within the former EMIS, but much of the data that was collected could be analysed in a way to inform crisis-sensitive planning and programming.

The Ugandan Education Response Plan (ERP), launched in 2018, aims to reach 675,000 refugee and host community learners per year. UNHCR is supporting the OPM in tracking and detailing the needs of these learners. Implementing partners provide detailed data through several different information management systems and approaches. These include data from initial assessments to determine needs, Activity Info (an online report platform to track project progress) and school-level monitoring of student and teacher attendance. All these systems provide a wealth of data related to the education response for refugees and host communities. It should be noted that schools in refugee settlements have not been included in the ASC so data from settlement schools are not included in the EMIS; and that the EMIS ceased data collection in 2017, before the launch of the ERP. Refugee children enrolled in government schools would be included in any new ASC if a similar process was followed.

⁷ The main reasons for discontinuation included a lack of coverage (many schools did not provide complete data), lack of confidence in the quality of the data and issues around implementation and cost. More information can be found in the section beginning on page 17: The Ugandan EMIS: Recent reviews and the formation of an EMIS Taskforce.

⁸ Provided by the UNEb.

⁹ Provided by the UBOS.

Development partners are supporting the collection of data via SMS systems with a focus on collecting data that are relevant to decision-making at school, district and national level. Projects are running in a significant number of districts within the country, including a number that host refugee populations.

Reasons for the current data landscape

The quality and comprehensiveness of the ASC, and therefore the EMIS, deteriorated during the last decade and led to its discontinuation in 2017. Two of the fundamental issues undermining the ASC and EMIS were the lack of a legal and policy framework to drive the process; and the steadily reducing coverage of schools. Private schools, in particular, were not returning survey results; but in addition, increasing numbers of government schools were not providing complete data. Other major factors included the timeliness and the quality of the data collected. ASC findings were sometimes not published until the last quarter of the year; the sheer volume of paper forms to be filled in and entered manually increased the likelihood of errors; and with funding based on enrolment and allocated based on needs, there was a built-in incentive for respondents to exaggerate both.

Findings from two recent reviews of the EMIS highlight these issues and identify that a lack of sustainable investment,¹⁰ coupled with a focus primarily on the technology pillar (at the expense of strengthening the people and processes that make up the EMIS as a whole), contributed to this deterioration. The second review has led directly to the formulation of the task force that is driving the new ASC and EMIS development. The ASC is being redesigned to address many of the key issues identified in the reviews.

Information management systems to track the refugee response have grown organically and in line with the needs of UNHCR (which is globally mandated to coordinate the refugee response). Many implementing partners fall back on tried and tested assessment methodologies and monitoring tools that have been used successfully in other contexts, modifying them where appropriate to align with the specificities of the Ugandan education sector.¹¹ These systems are necessary, in part, due to relatively dynamic refugee movements – even when overall numbers may remain stable, refugees could be returning home in one area of the country while at the same time newly displaced refugees are arriving. Assessment tools that are in the language of the refugees and/or based on tools from their countries of origin might also be used. Finally, most monitoring and evaluation (M&E) is carried out for project management purposes and to ensure compliance with donor reporting requirements.

Development partners are pioneering approaches where real-time data are collected (via SMS) to support decision-making at school, district and central levels. The data to be collected have been determined through the development of a clearly defined theory of change. The projects considered in this case study aim to have a relatively light reporting burden yet should be able to provide detailed analysis quickly and regularly¹² to drive the quick identification of issues and the decision-making required to deal with them.

¹⁰ EMIS was often driven by donor-funded initiatives.

¹¹ For example, assessments and monitoring provide data that can be used to calculate the Ugandan standard efficiency ratios for education.

¹² The DFID SESIL project reports on a monthly basis.

Important areas to be addressed

The introduction of a functioning EMIS is a priority, with work already underway on some of the critical actions identified by the EMIS Taskforce (the most pressing being the development of an EMIS policy framework and the conducting of the ASC). However, it will be key to the success of the future EMIS that time is taken for a complete assessment of the data and analysis needs of the education sector to ensure that it is fit for purpose. The involvement of DEOs and EiE practitioners in these initial stages will help ensure that the system provides data that support budgeting, planning and monitoring at district level and that the EMIS will include crisis-sensitive information.¹³

The current data collection and analysis carried out by organizations supporting the refugee response are fairly comprehensive and useful in terms of needs identification, planning and monitoring. However, the data collection is resource-intensive and lacks coherence across districts/organizations (especially needs assessment data). It would be useful to implement a similar process for refugee data collection as is proposed for the ASC. The Education in Emergencies Working Group (EiEWG) should support a way forward to determine what information is needed for what purposes and how best to collect and analyse this data. The systems should seek alignment with the central EMIS so data are comparable, and it should be clear how data are provided (so that they are accessible and useful) to DEOs and the MoES.

Discussions should take place to determine how DEOs and the MoES can collect and analyse data in future emergency situations (whether refugee responses, floods, health emergencies or other crises), as well as the capacity development required for this to be successful. The use of technology such as SMS systems should be evaluated to see if processes can be put in place for rapid assessment of schools affected by crises. In implementing any initiative, it will be important to strengthen all three pillars (people, processes and technology) to ensure success.

The upcoming development of the new Education Sector Strategic Plan (ESSP) presents an opportunity to create a long-term vision for EMIS. Efforts on the various tasks described above should not happen in isolation but should support this long-term vision of how an effective and efficient EMIS can support education sector policy and planning for both development and humanitarian actors.

¹³ A modular or phased approach may be necessary, so not all elements may be incorporated in the first iteration of the EMIS; but the underpinning analysis and vision for the EMIS should map out all the requirements.

I. Context

A. General country context

Uganda is a country in the Great Lakes region of Sub-Saharan Africa with an overall population of 44,269,594 million people (World Bank, 2019). With a Human Development Index (HDI) rating of 0.528,¹⁴ Uganda is placed 159 out of 189 countries within the index and falls just inside the Low Human Development bracket. Uganda has one of the youngest and most rapidly growing populations in the world; its total fertility rate is among the world's highest at 5.8 children per woman.¹⁵ The population is both mostly rural and relatively young, with 77 per cent living in areas classed as rural and 47 per cent under 15.¹⁶

Estimates from the Uganda National Household Survey 2016/2017 suggest that the proportion of the population living below the national poverty line rose from 20 per cent in FY2013 to about 21 per cent in FY2017.¹⁷ With one-third of children under five stunted, Uganda is among the 20 countries worldwide with the highest prevalence of undernutrition. Stunting is nearly twice as high in rural compared to urban areas (36 per cent compared to 19 per cent).¹⁸

Uganda remains the largest refugee hosting country in Africa (UNHCR, 2019a) and third in the world, with a caseload of approximately 1.36 million¹⁹ refugees. The majority are from South Sudan (62.8 per cent) and Democratic Republic of the Congo (DRC) (28.6 per cent);²⁰ while refugees from Burundi, Eritrea, Rwanda and Somalia number over 100,000 in total.

The young and growing population is putting increased pressure on the education system. The significant refugee population is an additional challenge, not only in terms of numbers but also bringing with it the complex needs of learners including multiple languages, missed years of schooling and exposure to violence and conflict.

Uganda, through the Office of the Prime Minister (OPM), officially launched the Comprehensive Refugee Response Framework on 24 March 2017 (in line with the New York Declaration for Refugees and Migrants²¹), and the Education Response Plan (ERP) was then launched on 14 September 2018 by

¹⁴ See UNDP, 2019 Human Development Index Ranking, <http://hdr.undp.org/en/content/2019-human-development-index-ranking> (Accessed 22 June 2020.)

¹⁵ See CIA World Factbook, <https://www.cia.gov/library/publications/the-world-factbook/geos/ug.html> (Accessed 21 November 2019.)

¹⁶ In comparison, neighbouring countries include DRC (where the rural population is 56 per cent, and 46 per cent of the population are under 15) and Kenya (where the rural population is 73 per cent, and 40 per cent are under 15). The rural population of Nigeria is only 50 per cent, with 44 per cent of the total population under 15. All data are taken from http://uis.unesco.org/en/home#tabs-0-uis_home_top_menus-3 (Accessed 19 November 2019.)

¹⁷ See World Bank, 'The World Bank in Uganda: Overview', <https://www.worldbank.org/en/country/uganda/overview> (Accessed 20 November 2019.)

¹⁸ Ibid.

¹⁹ There are 1,362,269 refugees in Uganda as of 31 October 2019. Source: UNHCR, Government of Uganda, Office of the Prime Minister, 'Uganda Comprehensive Refugee Response Panel', <https://ugandarefugees.org/en/country/uga> (Accessed 19 November 2019.)

²⁰ Ibid.

²¹ See OPM, 'The Comprehensive Refugee Response Framework', <https://opm.go.ug/comprehensive-refugee-response-framework-uganda/> (Accessed 21 November 2019.)

the Ministry of Education and Sports (MoES). The framework seeks to ensure the refugee population has access to basic services including education, this through the integration of refugee children in the Ugandan education system with support from UN agencies, donors and the wider humanitarian community. The ERP was developed and costed outside of the current Education Sector Plan (ESP), but aligned with three of the ESP's key objectives: (i) improved and equitable access to education services, (ii) better quality of services and (iii) more efficient and effective systems.

In addition to the refugee crisis, Uganda has also experienced climate-related emergencies including flooding,²² landslides and drought. All have an impact on the education sector with significant loss of infrastructure occurring in the areas worst affected.

B. Education context

UGANDAN EDUCATION SYSTEM

The Ugandan education system follows a four-tier model that has been in existence since the publication of the Castle Commission report (1963). It consists of seven years of primary education, which are both compulsory and free, followed by a four-year cycle of lower secondary and a two-year cycle of upper secondary (7-4-2); this is followed by two to five years of tertiary education. There is also a two-year²³ pre-primary stage of education, attended by three- to five-year-olds before joining primary school. Pre-primary education is not state-funded; costs are covered by partner agencies, private organizations or parents.²⁴

Universal primary education was introduced in 1997 with the abolition of all tuition fees and PTA charges for primary education. In the years following its introduction, gross enrolment for primary education rose from 3.1 million in 1996 to 7.6 million in 2003 (Bategeka & Okurut, 2005). The lasting effect of this rapid increase has been to push up teacher/student and classroom/student ratios. At primary level, the national gross enrolment rate (GER) is approximately 111 per cent for both boys and girls (the net enrolment rate (NER) is 93 per cent for boys and 94 per cent for girls). This drops to a GER of 25 per cent for secondary school (27 per cent for boys, 23 per cent for girls) with NER at 22 per cent (23 per cent for boys, 21 per cent for girls). Standard efficiency ratios calculated at district level include the teacher/student ratio: nationally at 55:1 for primary²⁵ and 28:1 for secondary; and the classroom/student ratio: at 77:1 for primary and 13:1 for secondary (MoES, 2017a).

National averages hide the story in many classrooms, with efficiency ratios varying widely between districts and across grades. In 2017, enrolment at P1 numbered almost 2 million children, while P7 enrolment was only 624,000 (indicating completion rates of 30 – 40 per cent) (MoES, 2017a).²⁶ For refugees, primary enrolment is relatively high at 72 per cent, but secondary school enrolment is much lower at 12 per cent (UNHCR, 2019b).

²² In November 2019, IFRC reported nearly 60,000 people affected by flooding in eastern Uganda: <https://go.ifrc.org/emergencies/3854#details>

²³ Children can join from age 3, so can actually complete three years of pre-primary education.

²⁴ See SAQMEQ, Uganda Education Fact Sheet, <http://www.sacmeq.org/?q=sacmeq-members/uganda/education-fact-sheet> (Accessed 19 November 2019.)

²⁵ These figures are for government schools; ratios are lower in private schools. Settlement schools are not currently included in the national EMIS and ASC.

²⁶ P1 enrolment: 1,965,606; P7 enrolment: 623,946.

COORDINATION WITH DONORS, UN AND PARTNER ORGANIZATIONS

There are two main coordination forums within Uganda. The Education Development Partners (EDP) Group consists mostly of bilateral donors alongside UN agencies and the World Bank. The EDP Group is jointly chaired by Belgium and USAID and meets on a monthly basis. An Education in Emergencies Working Group (EiEWG) also meets every month and is co-chaired by UNHCR, Finn Church Aid and the MoES. The EiEWG is focused on the refugee response and has several sub-working groups including an information management group.

The refugee response is driven by the ERP for refugees and host communities in Uganda, which the MoES recognizes as 'a product of the concerted efforts of various stakeholders who have contributed financial support, technical expertise and practical input' (MoES, 2018, p. 2).

An ERP Secretariat has been established within the MoES and supported with staff funded by UNICEF and UNHCR. District Education Offices (DEOs) recommend the establishment of coordination structures/committees at the district levels with clearly defined roles and a link with the national steering committee.

CURRENT EMIS

The current EMIS was discontinued in 2017 over concerns about the quality and coverage of the data within it, highlighted in part during a peer review. A subsequent review by an MoES-led task force expanded on many of the issues raised in the previous review and set out a series of recommended actions needed to develop a more robust, sustainable EMIS focused on ensuring the quality and utility of its data. More details on the reviews and task force can be found in the section: The Ugandan EMIS: Recent reviews and the formation of an EMIS Taskforce (page 17), as well as in Annex 1.

II. Data environment: Drivers for the collection and analysis of education sector information

Education sector information requirements in Uganda are primarily driven by the needs of users that fall into three main categories:

1. The main government departments (primarily the MoES and the Ministry of Finance, Planning and Economic Development (MOFPED));
2. Education development partners (including DFID, USAID and other bilateral donors, GPE and the World Bank, UNDP, UNESCO, UNICEF and INGO partners);
3. Education in Emergencies (EiE) partners (with the primary user being UNHCR as coordinators of the refugee response).

A. Ugandan Government Ministries

The primary needs and drivers for the collection and analysis of education data are budgeting and planning. Funding is allocated to district level based on capitation grants that are directly proportionate to student enrolment. Funding also covers HQ costs, which include the statistics department who oversees the EMIS and conducts the Annual School Census (ASC).

The **Ministry for Education and Sports** has oversight of the education sector as a whole and leads on the development of education sector plans. It houses the statistics division that oversees the ASC and the EMIS.

The **Ministry of Finance, Planning and Economic Development** liaises with the MoES regarding the development and budgeting of the sector plan.

The budget and planning processes have two significant windows:

1. The first is the development of a costed multi-year sector plan. The current plan runs from 2017 to 2020. Therefore, at the current time there is an increased need for data to draft the next (2021 – 2025) Education Sector Strategic Plan (ESSP).
2. The second window is for yearly planning and budgeting, and is mostly focused on financial allocations. Key data include enrolment and staffing.

The 2018 ‘Monitoring and Evaluation Framework for the Education Sector’ is a narrative document articulating the approach to be taken to create and operate a monitoring and evaluation system in the sector. It lists five objectives for the M&E framework:

1. Provide a management tool for tracking progress on implementation and demonstrating results of the sector over the planning cycle.
2. Ensure compliance with all statutory reporting requirements for projects’ and programmes’ performance information.
3. Collect and provide information that will be used to guide and inform planning, prioritization, allocation and management of resources.
4. Enable designated agencies to track progress of their programme implementation and assess performance regularly and systematically, in accordance with the agreed objectives and performance indicators.
5. Collect and provide information that will provide a basis for determining impact and effectiveness of projects and programmes.

Another driver for the MoES is the need to track and report on key indicators, including those for Sustainable Development Goal (SDG) 4 and the Continental Education Strategy for Africa (CESA). Analysis of these indicators also provides important information to the MoES on more qualitative aspects of the education system, helping identify barriers to education or the needs and issues affecting specific groups. In addition, it informs an understanding of how effectively (in terms of learning outcomes such as literacy and numeracy) the education system is performing.

The MoES, in partnership with the UNESCO National Committee, has conducted a gap analysis around efforts towards the accomplishment of SDG and CESA goals. The analysis outlines issues in four areas:

1. The legal and policy context
2. The national planning context
3. The monitoring and evaluation context
4. The management and governance context

A draft report outlining the key challenges and suggested way forward was shared in December 2019.

Other government bodies of note are:

- The **Uganda National Examinations Board (UNEB)**, which is mandated to plan and conduct primary and secondary examinations within Uganda.
- The **Uganda Business and Technical Examinations Board (UTEB)**, which is mandated to streamline, regulate and coordinate examinations and awards in the Business and Technical profession.

EiE planning has thus far been conducted as an additional task by the relevant MoES departments in partnership with the **Office of the Prime Minister (OPM)**, which has overall responsibility for the refugee response. However, with support from UNICEF and UNHCR, a secretariat has been set up to support the implementation of the ERP for refugees and host communities and is hosted by the MoES. Currently, the ERP Secretariat is providing direct support to DEOs that have a refugee presence and discussions are taking place as to whether to set up ERP committees at district level.

B. Education in Emergencies partners

Currently, the primary focus of the EiEWG within Uganda is the refugee response, with significant numbers of refugees crossing the border from South Sudan and DRC. EiE data are focused on identifying the location of refugee children and supporting their participation in the Ugandan education system (though this is often through the setting up of additional ‘community’ schools²⁷ in settlement areas). They are mainly focused on formal school-aged children and early childhood education, but some partners also run vocational training programmes and provide support to tertiary education.

Once schools supporting refugees have been identified, partners use assessment methodologies to identify needs and support the design of programmes. Assessments can be detailed with significant qualitative data and can include asking questions directly to children. These methods are designed to identify barriers to enrolment and learning; to understand the current capacity of children (e.g. how many have missed school and for how long); and to get a wider picture of the community.²⁸ In addition, site level assessments identify needs at the school level such as classrooms, desks, materials or teachers.

Refugees are primarily housed in settlements (where families have been allocated land to settle on by the Ugandan Government). Within settlements, schools are normally managed and staffed by partners and are currently not recognized within the government system; therefore, they do not qualify for

²⁷ These schools are funded and run by partner agencies and would currently fall outside the EMIS.

²⁸ This can include information on communities’ attitudes towards education, whether there are protection risks involved in attending school, the differences in the needs of certain groups of children (girls, those with disabilities etc.).

government support. Where refugees attend host community schools, additional support is usually provided by partner agencies. There are significant numbers of urban refugees (and an unknown number of unregistered refugees); and they, in principle, have access to Ugandan government schools.

Where programming is taking place, regular monitoring is also used to track progress and identify new needs as they arise. This is to support project management and donor reporting as well as to enable partners to share information on needs so that gaps can be addressed. Information is also used to support actions by head teachers, school management committees and DEOs.

Organizations participating in the EiEWG include: AVSI, CRS, Education Cannot Wait Consortium, Finn Church Aid, NRC, OXFAM, Plan International, Save the Children, Street Child, UNESCO, UNHCR, UNICEF, War Child, Windle International and World Vision as well as numerous other INGOs and local NGOs.

C. Education development partners

Development partners utilize a mix of government data and data collected specifically as part of development projects or assessments to support the development of project proposals and project planning. Government data can be used to identify areas of greatest need (e.g. low enrolment rates for girls, or the poorest learning outcome indicators). The group is jointly chaired by Belgium and USAID, two of the main partners, and includes DIFID, GIZ, GPE, JICA, UNESCO, UNHCR, UNICEF, Enable VVOB and The World Bank, as well as other UN agencies and bilateral.

Assessments are then used to help with the design of any development project in a similar way to EIE programming, although there will probably be more emphasis on some of the longer-term, more systemic issues.²⁹

A major requirement for the United Nations Development Programme (UNDP) is tracking progress on indicators within the United Nations Development Assistance Framework (UNDAF). The current UNDAF for Uganda (2016 - 2020) has several targets, set under 'Strategic intent No. 2: Human capital development', that are education-related. The following UNDAF indicators cite the EMIS as the primary source of information:

- Survival to P7 (Retention rate at final year of primary school)
- Transition rates to Senior 1, by gender
- Percentage of boys and girls ready for primary school through participation in Early Childhood Care and Development (ECCD)
- Percentage of qualified and professionally-trained teachers
- Number of graduates with market-oriented skills from target training institutions.

²⁹ Typically, this could include elements of building capacity for school management or strengthening DEOs.

III. The Ugandan EMIS: Recent reviews and the formation of an EMIS Taskforce

The Ugandan EMIS has evolved over the last two decades with several donor-supported initiatives (see Annex 1). The current bespoke EMIS was initially developed in 2010 by a private contractor with support from USAID. However, the focus has generally been on information technology (IT) solutions that would make the data more accessible (especially at the district level) and support better analysis. Therefore, there was little impact on the data collection methodologies and datasets, both of which remained relatively constant. The EMIS consists almost entirely of data collected through the ASC and supports two main outputs that were both produced on a yearly basis:

1. Comprehensive statistical summaries focusing on basic education statistics such as enrolment, student transition, teacher numbers and efficiency ratios for all levels of education, disaggregated by district and gender.
2. A sector performance report containing information on budgetary matters and policy aims and outcomes.

Two reviews of the Ugandan EMIS have taken place in the last four years. The first, part of a regional initiative,³⁰ was conducted by a regional team led by the Association for the Development of Education in Africa (ADEA) in 2016. The second was undertaken by a specially created task force at the behest of the Permanent Secretary for the MoES in March 2017. Based on the findings and recommendations of this second review, a roadmap was developed towards strengthening and improving the EMIS.

A. 2016 ADEA-led EAC EMIS Peer Review

A small team made up of ADEA technical specialists and EMIS experts from several EAC Member States visited Uganda for four days in July 2016, where a number of key stakeholder consultations took place. The draft report was validated in a two-day meeting in December 2016. The review was based on an EMIS framework³¹ that had been adapted for the East African context and consisted of 17 criteria and measures. The outcomes are summarized in four assessment areas: (i) Legal and policy framework; (ii) Resource availability and utilization; (iii) Statistical processes; (iv) Education information reporting.

The final report painted a mixed picture of the Ugandan EMIS, with the system having some strong areas but also several key weaknesses (ADEA, 2017). Ratings based on the framework (see Fig. 1) indicated that the EMIS scored highly on statistical processes but was weak in terms of the legal and policy framework. Looking in more detail at the education information reporting area, the system was viewed as relatively comprehensive, with good accessibility and comparability,³² but punctuality and relevance scored poorly.³³

³⁰ The African Union (AU) in 2011 launched the EMIS initiative in the EAC Region, with ADEA to lead peer reviews of EMIS in participating countries.

³¹ The EMIS norms and standards assessment framework for the SADC region can be found here: http://www.adeanet.org/sites/default/files/sadc_ns_assessment_framework_english_combined.pdf

³² Comparable statistics for many measures are available back to 2002: <http://www.education.go.ug/wp-content/uploads/2019/07/FACT-SHEET-2016.pdf>

³³ The *Uganda EMIS Peer Review Report 2016* cited that ‘for the last several years in a row, MoES has experienced untimely release of data’ (ADEA, 2017, p. 34).

The main issues identified were that:

- The current EMIS is not meeting its objectives, with only one of the five proposed modules operational (the basic statistics module). This is due to a lack of investment in its development, coupled with a weak legal and policy framework.
- The current EMIS has limited accessibility and though web-enabled, it is not web-based. The District Education Management Information System (DEMIS) is dysfunctional. These issues are difficult to rectify as the EMIS is a vendor locked-in system.
- There are misconceptions and a lack of clarity on the function and role of the EMIS vis-à-vis the statistics division. The perception that the EMIS is poorly performing and overfunded is contrary to the actual situation, wherein the EMIS produces the basic data required by the sector for resource allocation despite limited funding.

Figure 1. Summary performance of Uganda EMIS on EAC EMIS Norms & Standards

S/N	Assessment areas	No. of standards assessed	Average score	No. of standards scoring above average	Overall performance rating
1	Legal and policy framework	7	1.6	5	65.0
2	Resource availability and utilization	2	2.7	2	67.5
3	Statistical processes	2	3.1	2	77.5
4	Education information reporting	6	2.8	4	70.0

Source: Adapted from ADEA, 2017. Uganda, EMIS Norms and Standards for the East African Community - Peer Review Report 2016, p.39

The main recommendations were to:

- Strengthen the legal framework and develop a comprehensive Sector Policy on EMIS.
- Address budget issues by developing a sustainable financing strategy that covers EMIS activities and critical statistical operations.
- Expand the current staffing to include relevant EMIS technical expertise.
- Operationalize the four dormant EMIS modules (i.e. Human Resource, Financial Management, School Inspection and School Outcomes).

B. EMIS Review Taskforce 2017

The Taskforce charged with the 2017 review of the EMIS was comprised of members from the MoES technical departments, the National Information Technology Authority of Uganda (NITA-U), the National Council for Higher Education (NCHE) and the Uganda Bureau of Statistics (UBOS). The terms of reference for the mission included identifying: (i) Current education information requirements; (ii)

Capacity and gaps in the current EMIS; (iii) Feasible and sustainable recommendations to improve data production and management within the sector; and (iv) Relevant internal linkages and synergies.

The Taskforce based their investigation on a standard EMIS framework that comprises three key pillars:³⁴

1. **The people pillar** (i.e. users and suppliers of data)
2. **The practices and procedures pillar** (i.e. sector policies, rules and regulations, institutional arrangements, practices, guidelines, concepts, processes and service delivery standards)
3. **The technology pillar** (i.e. software and hardware for statistical operations, information sharing, reporting and information dissemination).

MAIN FINDINGS AND ISSUES

The current EMIS was operationalized mainly using donor funding but without a specific policy (and therefore without clearly specified goals, objectives, targets and implementation strategies, as well as financing arrangements and requirements). This resulted in missing, or not fully completing, important steps required to produce a robust and relevant EMIS. In addition, much of the development focus was on the technology pillar to the detriment of the other pillars.

The report corroborated the EMIS peer review in citing weak legal and policy frameworks. Consequences identified were numerous and included the emergence and existence of multiple parallel systems, a lack of quality standards, lack of a data/sampling frame and the poor identification of data needs across the spectrum of data producers and users.

The current EMIS suffers from poor quality data; delays³⁵ in undertaking data collection, processing and the dissemination of findings and a lack of quality assurance mechanisms result in the reduced reliability and accuracy of the data collected.

Of particular concern was the lack of functionality of the EMIS (only one of the five envisaged modules being implemented), a dysfunctional DEMIS and the problems that a vendor locked-in system presented. In addition, the sustainability of EMIS was a concern (with many of the improvements being supported by donors), in particular the lack of an EMIS budget and human resources (a huge challenge for implementation at the district level). The report also echoed the misconceptions around the EMIS identified in the *ADEA Uganda EMIS Peer Review Report 2016 (2017)*.

REPORT RECOMMENDATIONS AND ROADMAP

The Taskforce made seven pages of recommendations to address the issues identified, covering both short- and medium-term time-frames. Several key recommendations have now been taken forward as part of the 2019/20 ASC detailed later in this report. A roadmap for the implementation of these recommendations was developed with five overarching activities:

³⁴ The three pillars framework is a generic software development model, although it has now been generally superseded by other approaches.

³⁵ In some cases, it was reported that the EMIS collection tools did not arrive until the second term.

1. Formulation of sector EMIS strategy
2. Strengthening of sector support, legal and policy framework for EMIS
3. Development of a new methodology and Standard Operating Procedures (SOPs) for data collection in the education sector
4. Reengineering and development of EMIS Software Solution
5. Development and operationalization of EMIS communications and dissemination strategy.

IV. Current information collection mechanisms, their products and utility for crisis-sensitive education sector planning and response

Research has identified five main areas where education information is captured and used for operational and planning purposes. However, this is not a comprehensive list and it is expected that there are others:³⁶

- **Annual School Census:** The main system for the MoES is the ASC, which is used to populate the EMIS. As noted in the overview section, this process is currently being overhauled.
- **Teacher Management Information System (TMIS):** An online system where all government teachers are required to register and upload their certificates.
- **District Education Offices:** DEOs are the main subnational actors responsible for education provision. Significant amounts of data are captured and stored at the DEO level in addition to the ASC.
- **Refugee response:** Information on refugee influxes³⁷ is being coordinated by UNHCR but is mostly actioned by INGO partners programming in those areas.
- **Data-driven development programmes:** There are several development programmes that are collecting data that are central to programme objectives. Two such programmes are outlined within the section; both use SMS technology as the main data collection method.

³⁶ The EMIS and the UNHCR emergency data collection systems are seen as the primary sources of data for development and EiE actors; and at the subnational level, DEOs were involved in all the data collection systems analysed. Therefore, these areas were the key focus of the study. The other systems were analysed, as they provided a reasonable cross-section of other data systems and information/access was provided to the researcher.

³⁷ The focus is on the larger caseloads from DRC and South Sudan but does include other countries.

A. Interoperability of the systems

Currently the ASC (EMIS), the TMIS, refugee response data and education development partner systems (such as the Strengthening Education Systems for Improved Learning (SESIL) initiative) are managed separately and the data are generally stored and analysed in isolation. It is hoped that when the new EMIS is developed it will include a software interface to the TMIS. Refugee school information is currently being used to inform budgeting around the Refugee Response Plan, and EMIS data from government schools should include refugee students. If refugee (settlement) schools are included within the government system under the new ASC and sector plan, then all refugee data will be included in the new EMIS.

Data at the DEO level are generally paper-based or on Excel spreadsheets, and data for each system are kept and used separately. Other than the analytical abstract, ASC data are not fed back to district level.

B. EMIS and Annual School Census – 2017

The EMIS currently holds information that primarily comes from the ASC. The ASC was conducted every year until 2017³⁸ and involved the submission of detailed information forms of roughly 20 pages. The 2016 ASC covered pre-primary,³⁹ primary and secondary schools (both government and private) and post-primary institutions (these are mostly Technical and Vocational Education and Training (TVET) centres, an alternative to the secondary school academic stream). Previous years also included non-formal training centres and tertiary institutions (both degree and non-degree awarding).

For 2016 the numbers of institutions covered were:

- 6,798 pre-primary centres responded with a total enrolment of 564,033 (50.5% female).
- 19,718 primary schools responded with a total enrolment of 8,655,924 (50.0% female).
- 3,070 secondary schools responded with a total enrolment of 1,457,277 (47.5% female).
- 292 post-primary institutions responded with a total enrolment of 63,285 (41.3% female).

ASC METHODOLOGY

ASC forms are filled in by head teachers/college principals. Three copies of the forms are completed and returned to the DEO for verification. After verification, forms are stamped and one copy is retained by the school, one copy is kept by the DEO and one copy is sent to the MoES in Kampala.

In Kampala, the statistics division is responsible for error checking and data entry of all submitted forms into the EMIS. The data are then housed on the EMIS within the MoES. The statistics division at the MoES in Kampala, with the aid of the EMIS software, produces a yearly statistical abstract (the 2016 version ran to 174 pages of which roughly 100 pages are statistical annexes). The abstract provides a breakdown of data for each level of education and by district. Population data provided by UBOS are used to calculate the GERs and NERs detailed in the abstract.

³⁸ There is a 2017 Statistical abstract available, but the ASC process was not fully completed so data from the 2016 abstract are presented within this case study.

³⁹ Currently, pre-primary is the purview of partner agencies and the private sector. There are no government pre-primary centres.

STRENGTHS

Despite several limitations, the ASC provides the EMIS with a strong and comprehensive dataset. A more complete overview of the data recorded is provided later in this chapter, but key areas are outlined below:

- **Familiar and consistent methodology:** The methodology and format of the ASC have not changed much over the last ten years. Therefore, there is a degree of institutional knowledge and understanding of the process that allows it to proceed relatively smoothly. Furthermore, the consistency of the methodology and format help to make data more readily comparable over time.
- **Good geographic and gender disaggregation:** Data are fully disaggregated by gender and district so various statistics can be calculated to show gender and geographic disparities. Districts are the main administrative unit for education administration; however, the sub-county and parish are also recorded so detailed analysis for each district is also possible.

CHALLENGES AND LIMITATIONS

The ASC is constrained by the paper-based methodology used and the volume of information recorded. In addition, there is an intrinsic bias built into the system by using head teachers as providers of the data. The 2020 census seeks to address these issues by using independent assessors and a tablet-based tool.

- **Response rate:** Government schools are registered,⁴⁰ and therefore a response rate for government schools can be calculated. However, the number of private and community schools is not definitively known, so the overall response rate cannot be calculated accurately.
- **Data processing burden:** With 29,787 institutions (2016) submitting forms, this implies an extensive data processing burden. The statistics department has 23 staff on contract as clerks to support the process, but with each form containing up to 20 pages of information there are significant risks in terms of errors (both in filling the forms themselves and as part of the data entry process). No additional staff appear to have been recruited to support the EMIS at district level.
- **Bias:** Schools are awarded capitation grants based on school enrolment. Therefore, there is a built-in incentive for head teachers to exaggerate student numbers (and to some extent needs at the school) in the hope of securing more funding. The common opinion among those interviewed was that the enrolment figures found in the EMIS were inflated.⁴¹
- **Dated population data:** GER and NER rely on population data from UBOS. These data can be dated and may be based on estimates, therefore introducing a margin of error into the calculations. Current population data are based on the 2014 census and population growth projections. The next census is planned for 2022.

⁴⁰ Schools that are not registered will not be considered for funding.

⁴¹ One justification was the large discrepancy between P1 enrolment and those sitting P7 exams. The question is whether this is due to drop-out or because enrolment figures for P1 – P4 may be inflated (in which case, the percentage of children transitioning is actually higher).

- **Timeliness and utility for decision-making:** The paper-based system is a lengthy process with results provided towards the end of the year, making it useful only for the following year's planning. Breakdown is at district level so does not provide any additional analysis for school level decision-making.

SCOPE OF DATA COLLECTION AND CRISIS SENSITIVITY

Learners

The proposed school census for 2020 captures a relatively comprehensive set of data on learners. Data are to be recorded by **gender** and **nationality (Ugandan/non-Ugandan)** for all the information detailed below:

- **Enrolment rates** for each class
- The **nationality** of all students by class
- The **actual ages** of children in each class, which means it is possible to identify the number of overage learners, as well as how many children are how many years behind their cohort
- **New entrants** and **transfers** by class
- **Repeaters** by class
- **Orphans** by class (mother deceased, father deceased, both parents deceased)
- **Students with special learning needs** by class (mentally impaired, visually impaired, hearing impaired, physically impaired, autism, multiple handicaps)
- **Students sitting examinations** by class and term for **previous year**.

Crisis-sensitive utility and gaps

- A number of accelerated learning programmes are housed in primary schools, implanted by NGOs. It will be important to capture these enrolment data alongside standard enrolment to identify where and how many children are taking part in accelerated programmes.
- The nationality data can be used to give a reasonable estimate of the number of refugee children enrolled at any school and by district.
- The age data on enrolment are comprehensive and should support both humanitarian and development programmes that target overage children and children who have missed schooling (with many overage children having been so affected).
- New entrant data and overall number of children (especially of different nationalities) will give an overall trend for increasing displacement.
- Data on orphans and children with special needs can inform both emergency and humanitarian programming.
- Based on this information, it is not possible to determine how long displaced children have been at a school other than by comparing with the previous year, although there could be new caseloads incoming and old caseloads returning. By recording only the number of children it is not possible to tell how many are *newly* displaced.

Teachers and Other Education Personnel (see also TMIS)

There is a reasonable amount of information recorded on teachers and staff including gender, age, qualifications and recent training. This includes:

- Basic information including **payroll number, gender and date of birth**
- Highest **level** of education and highest teacher **qualification**
- Date of first posting, date of first appointment
- Type of **training** last year
- **Teachers** who have **left** and the reason for leaving
- **Non-teaching staff** information (numbers only).

Crisis-sensitive utility and gaps

- Basic information on the number and qualifications of teachers at each school and across districts is available.
- Training information will be useful in mapping teachers who have been trained in emergency subjects, though the ASC only records training during the last year.⁴²
- There is no option to identify assistant teachers (many are recruited and paid for by implementing partners); the nationality is not listed either, although the teaching qualification will be one way of determining nationality.
- Information on the reasons teachers left their posts includes an option for 'deceased' but 'displaced' or 'injured'⁴³ are not listed (although these could be added easily). Therefore, it is possible to track teachers killed or injured in an emergency.

Infrastructure and sanitation

Infrastructure information is detailed, and is disaggregated using the following categories: complete/incomplete, in use/not in use, permanent/temporary and required (not under construction). In addition, the work being done for those under construction is listed. Note the below is for secondary school, some categories may be missing at primary level:

- Classrooms
- Libraries, Science labs, Computer labs
- Storerooms, Offices, Staffrooms
- Teachers houses
- Latrine stances.

⁴² It is feasible to pull out data on specific teachers, but unlikely that the current system supports this. The new TMIS is a better place to house individual teacher information.

⁴³ 'Illness' is the closest option to injured.

For sanitation, figures are disaggregated by: teachers, boys, girls, mixed use:

- **Stances** with doors/shutters, without doors/shutters
- Number of **handwashing facilities, urinals, washrooms**

Crisis-sensitive utility and gaps

- Classrooms and other structures are listed as temporary or permanent and have the options 'in use' or 'not in use'. This information can be used to track provision of extra classrooms and non-functional classrooms due to an emergency.
- WASH data are quite detailed but do not include water storage facilities, nor is there space in this case to indicate damaged or non-functional facilities.

Teaching materials

The focus on teaching materials is primarily on textbooks, but information is also included on sports equipment and facilities:

- **Textbooks** and **guides** by class, including the number of periods per week the books are used
- Sports and athletics **equipment** (e.g. footballs, Netballs, bibs, etc.) – number available and needed
- Sports and athletics **facilities** (post/fields) – number available and condition (very good, good, poor).

Crisis-sensitive utility and gaps

- Details of all textbooks are recorded and so schools where stocks have been destroyed will be identifiable.
- The census also includes a metric on the number of students with adequate seating and writing space, which can be used to calculate school furniture needs.

HIV/AIDS

The census has a section on HIV/AIDS including:

- The **number** of students, teachers and non-teaching staff (by gender) **registered** with **HIV/AIDS** and supported by the school
- **Dissemination** of **HIV/AIDS information** (guidance/counselling, drama, debate, assemblies, peer-to-peer, talking compound).

Crisis-sensitive utility and gaps

- Details of HIV/AIDS resources include whether guidance and counselling are used, as well as other methods, and could be helpful for identifying resources for psychosocial support (PSS) and similar responses.

C. Annual School Census – 2019/20

Based on recommendations from the two previous EMIS reviews – and with a focus on informing the new 2021-2025 Education Sector Strategic Plan – the MoES (with support from DFID and the World Bank) has begun the process of conducting a new school census that will be followed by the development and implementation of a new EMIS.

There are three main stages to the initiative:

1. The mapping of all current educational establishments in Uganda using a geographic information system (GIS).
2. The conducting of the ASC.
3. The development of an initial EMIS to make the data and analytical findings available.

Stage 1: This stage was completed at the end of October 2019 with the subsequent report to be published in November 2019. The GIS mapping of schools was undertaken by UBOS with technical and financial support from DFID.

Stage 2: The second stage is slated to take place during the months of February and March 2020⁴⁴. UBOS will be responsible for recruiting and training of the enumerators that will undertake the census. The MoES statistics division is leading on the tool development; the tools will be programmed into mobile data collection devices using the census software CSPro. The data will be housed at UBOS where analysis based on the needs of the MoES will be carried out to provide information in line with (but not limited to) the previous statistical abstracts. The tools for this activity are currently under development.

Stage 3: The new EMIS is currently envisioned as a web-based solution that will provide access via the internet to statistical analysis.

This methodology will address some of the issues previously highlighted by the EMIS Taskforce, in particular:

1. A more complete mapping of all education establishments (the data frame) will be the basis for the census.
2. Data collection by independent, trained enumerators using mobile technology will strengthen the integrity of the data by reducing errors associated with cumbersome paper-based systems and reducing the chances of inflated figures and needs.
3. The findings should be analysed and presented in a much shorter time-frame.

The main drawback of the process is the significant cost of using paid enumerators and mobile data collection devices. This will be a challenge moving forward if this methodology is to be adopted on a regular basis.

Finally, once the mobile data collection tools are developed it may be easy to adapt them for use as rapid assessment tools in emergency situations.

⁴⁴ Some planned activities did not take place due to school closures caused by the COVID-19 pandemic.

D. Teacher Management Information System (TMIS)

The MoES Planning Department, with the support of UNESCO, developed and launched a TMIS. The system allows teachers to register online, providing their personal details, accredited copies of their certificates and their current roles.

The system is designed to allow better tracking and management of Ugandan teachers and includes the functionality to transfer teachers to new roles, enable them to apply for leave, set up interviews and other teacher management tasks.

STRENGTHS

When fully operational the system will allow the MoES to accurately determine the number of teachers at any given school, their qualifications and key information such as whether any are nearing retirement age. It should help eliminate issues such as the presence of 'ghost' teachers on the payroll and allow a more flexible management tool for the allocation of teaching resources.

CHALLENGES AND LIMITATIONS

The main challenge has been around management and maintenance of the software. The system is managed and operated by three different entities. The MoES Planning Department has overall control, but the software was created and is being maintained by a private vendor. However, the software is installed on servers within another government department. This has made access difficult for software maintenance and the MoES has no control should the servers go offline or experience other IT issues, etc. These problems have made the initial launch of the system rather patchy and have significantly impacted teachers' ability to register.

It is likely that connectivity to the internet will continue to be an issue for teachers moving forward in terms of keeping their profiles up-to-date unless continued support (e.g. through DEOs) is provided. Many teachers are not sure if they have been successfully registered and are awaiting confirmation.

CRISIS-SENSITIVE UTILITY AND GAPS

- If the full functionality of the system is realized, it will be possible to know the allocation of teachers at any school in almost real time.
- Education information is maintained on the system, provided teachers keep their profiles up-to-date; therefore, it will be possible to identify teachers with emergency-related skills such as training in PSS and Conflict Sensitive Education (CSE). However, it is unclear how easy it is to generate such information from the current TMIS database structure.
- The system could be expanded to allow the reallocation of teachers either because they are displaced by an emergency, or in response to emergency needs at schools.

E. District Education Offices

DEOs collect data from government and private schools through two main avenues:

1. A team of inspectors that visit schools and collect data (forms filled by head teachers) or perform observation/inspections.
2. A cascade system wherein head teachers provide information to parish chiefs who pass the information to the sub-county level. It is then compiled and passed to the DEO.

Most data collection is focused on verifying information provided by schools and parishes (such as enrolment and attendance data). Data collected by the inspectors include:

- Verification of enrolment, infrastructure and teacher data included in the EMIS
- Monitoring of ongoing works or materials distribution
- Classroom observations, including feedback to teachers for professional development purposes
- Learner attendance data and new enrolments, submitted to the DEO on a monthly basis and including the learner attendance (by gender) for each class for each day of the month
- Teacher attendance data (a record of each teacher's attendance and absences) for the month.

Currently, there is no emergency data collection procedure, but the school inspectors are available to visit schools that have been affected and provide up-to-date information on the status of the school, enrolment levels, damage, etc. Most EiE partners report that they make the data they collect available to the DEO.⁴⁵

Finally, it should be noted that a lot of information is collected at the request of the central level of the MoES (such as the ASC), but this information once consolidated at central level is not passed back to the district level.

STRENGTHS

The DEO benefits from direct interaction with schools and communities. Staff have strong local and contextual knowledge and the team of inspectors undertake regular school visits (although harder to reach schools may only receive a visit once per term or even less⁴⁶). Many of the staff have significant experience and have been involved in various data collection activities such as the ASC, eduTrac or the more recent SESIL project⁴⁷ (in some cases these projects provide support including motorbikes and fuel to enable better coverage of hard-to-reach schools).

This means staff generally have a good understanding of what is reasonable and accurate for the context and are able to compare findings with previous experience. A lot of detailed information is stored and on-hand.

⁴⁵ Although in what format and with what frequency were not determined.

⁴⁶ In larger districts (both in terms of school numbers and geography), lack of transport and funds for fuel limit the ability of inspectors to reach many of the schools furthest from the DEO.

⁴⁷ See later section on SESIL for additional benefits to DEOs and inspectors.

CHALLENGES AND LIMITATIONS

The main challenge for the DEO is that the majority of data and information is still collected and collated using paper methods. While an increased use of software such as Excel has made some processes faster, there is still a lack of capacity and support to DEOs to enable them to better use technology to support their work.

In terms of ICT and data capacity, most offices have limited functional computers and access to the internet is not consistent. DEOs generally do not have a dedicated staff for data and statistics and this role is normally taken up by the M&E officer or the planning officer with little capacity development to support them in taking on these tasks.

While there is a large demand for DEOs to collect data, the distances and poor state of roads make data collection a time-consuming task.

Often much of the data provided to Kampala is not accessible in consolidated and analysed form (e.g. there is currently no access to the central EMIS). This restricts the utility of the data collected for district- or school-level decision-making.

CRISIS-SENSITIVE UTILITY AND GAPS

- Enrolment and attendance will provide basic data on refugee children in government schools.
- Inspection visits do provide information on the needs of schools and, as such, issues such as collapsed classrooms, damaged wash facilities or large influxes of new students will be reported to the DEO. Although there was not enough time for the study to investigate this more fully, there appears to be an opportunity to utilize the cadre of inspectors to fill this gap with a more formal procedure and data collection tools for emergencies.
- There was no mention of data collection in terms of contingency planning or preparedness, although some procedures and protocols may exist.⁴⁸

F. Emergency data collection

The EiE response in Uganda is focused on several refugee influxes, the most significant being those fleeing ethnic violence from South Sudan and DRC. There are also other caseloads from countries including Burundi, Eritrea, Rwanda and Somalia.

Overall coordination is headed by UNHCR, with an EiEWG (jointly chaired by UNHCR and Finn Church Aid) along with an EiE Information Management Working Group. All partner agencies supporting the refugee response are requested to provide regular monitoring information to UNHCR.

The data collection can be broadly categorized into three areas:

Assessments for project planning: Organizations and agencies undertake assessments of schools and with communities to plan appropriate education responses. This may include site assessments for infrastructure, focus group discussions to determine barriers and issues within education, assessment

⁴⁸ There was limited time in the study to investigate this in detail.

of learners to tailor programmes to their needs and liaison with district education authorities to identify gaps.

Project and response monitoring: Monitoring information is routinely collected by partner organizations to both check the progress of projects and for reporting to UNHCR in terms of the overall response. An online system (Activity Info) is the main platform for reporting project outputs. However, information on attendance, enrolment and teachers is collected on a weekly basis. In addition, a more in-depth quarterly monitoring/assessment exercise is also undertaken.

Evaluation: The third focus is on project evaluation, providing information on whether the project has met its objectives in terms of outputs and outcomes (and in some cases impact).

For the purposes of this study, the focus will be on the first two areas of emergency data collection.

ASSESSMENTS: SCOPE OF DATA COLLECTION AND CRISIS SENSITIVITY

Discussions with the Education Cannot Wait Consortium and several partner agencies have been used to build a generic picture of the information gathered as part of assessments that are aimed at informing the design and planning of project interventions. Assessments collect a lot of both quantitative and qualitative data and include the following approaches:

Focus Group Discussions (FGD): Used with children, parents, teachers and community leaders to understand the barriers to education and issues faced by teachers and learners within the school. Includes costs of education, preferred education options (from children), and the proportion of out-of-school children and reasons why they are out of school.

Key Informant Interviews (KII): Can provide similar information to the FGDs, but also more specific information such as the locations and distance to education institutions, and current or recent humanitarian support to communities/families or schools. The exact data will depend on the specific KI that is targeted.

Site assessments: Similar information to the quarterly monitoring and ASC with data on enrolment, teachers, infrastructure and materials. Details of the school management committee, school development plans, etc. are also covered.

Learner testing: Used mainly for Accelerated Education Programmes (AEP) and vocational programming to determine the level of literacy and numeracy of learners to help identify the best path to education for them (this could be reintegration into formal education, an AEP, or TVET options⁴⁹).

Assessment data are mostly used to determine targets and project budgets and get baseline information. They may somewhat influence the project design (this is more likely for consortium or sector-wide assessments), but most assessments are carried out to provide the necessary information for detailed planning of projects that are already outlined.

⁴⁹ This list is not exhaustive but highlights the three most common project interventions listed during field visits.

Crisis-sensitive utility and gaps

- Data acquired through humanitarian assessments have a direct utility in the design and planning of programmes. Qualitative information including identification of the barriers to education and learning are areas that are not covered within the EMIS.
- Some of the more quantitative data are a repetition of normal data collection by DEOs, such as enrolment rates, teacher numbers, classrooms available, etc. While the assessment data are timely for programme planning, they will also become dated quickly.
- Depending on the organization, methodology and sample, the data may or may not be comparable to other humanitarian assessments. Sample size may also affect whether the data can be generalized.
- With partners having their own methodologies, tools and training for enumerators, it is difficult to measure the quality of the data collected and of the analysis carried out.⁵⁰

REGULAR MONITORING INFORMATION: SCOPE OF DATA COLLECTION AND CRISIS SENSITIVITY

In support of the Refugee Response Plan and under the coordination mandate of UNHCR, all partner agencies supporting the refugee education response are requested to provide UNHCR with regular monitoring data. These data are made available to DEOs and the MoES, usually in the form of Excel spreadsheets. The data follow a similar format to the data collected via the EMIS.⁵¹

Weekly/monthly monitoring information

Partners collect weekly and monthly attendance information from schools⁵² they support, including:

- **Student daily attendance** by class, gender and refugee/national
- **Teacher daily attendance** by name and grade.

This information is normally collated by the head teacher and collected by project assistants of the partner agencies. The assistants may conduct some verification such as a headcount on the date of the visit. The main use of teacher information is to verify their attendance for payment. Most teachers at settlement schools are directly employed by partners; in addition, there may be several teaching assistants (usually refugee teachers) on the partner agency payroll.

Enrolment data are used for reporting the numbers of children reached. Attendance data are used for advocacy and engagement with head teachers and school management committees.

⁵⁰ Sharing of the actual datasets collected and a comprehensive methodology including how errors and bias were addressed would help, but there are usually confidentiality issues with sharing datasets and the focus is often more on providing relative data for programming than providing robust analysis of the quality of the assessment.

⁵¹ Noting that (i) the EMIS was non-functional before the education response plan was initiated and (ii) that the ASC does not cover (refugee) settlement schools.

⁵² Schools within the refugee settlements are supported by partner organizations.

Quarterly/termly monitoring information

Quarterly monitoring/assessment data are much more detailed and in-line with the data that are collected at government schools by the ASC. Data are collected by agency staff through school visits and could almost be regarded as a mini-assessment. Information includes:

- **Student enrolment** by age, gender, class, nationality and special needs and the number of teams per class
- **Teaching force** (disaggregated by teachers supported by government, school management committees or partners/UNHCR) including qualifications
- **Infrastructure** with an emphasis on classrooms, latrines, water source/storage and desks/seats
- **Scholastic materials** and textbooks
- **Learning outcomes** (exam results by class/subject)
- **School management committee** and **student council** membership.

The fundamental output of the quarterly monitoring information is a gap analysis that highlights needs within the schools for infrastructure, materials or teachers. This enables coordination at the district level to identify where partners can step in with support if funding is available.

Crisis-sensitive utility and gaps

- Much of the information collected is similar to that produced for government schools by the ASC. The monitoring form enables the partner organization to determine the efficiency ratios and identify any critical needs in terms of infrastructure, materials or teachers.
- With enrolment being monitored on a quarterly/termly basis, trends in terms of increasing or decreasing student numbers can be provided throughout the year. If monthly forms tracked new enrolments this would allow the tracking of trends in terms of increasing enrolments. (Attendance data can be used to do this as a proxy, but as they do not differentiate between new students and old students, there will not be certainty about why attendance is increasing or decreasing.)
- Such monitoring forms are not very different from assessment data collection forms and could be modified for use as a rapid assessment tool.
- Based on the tools provided, preparedness and contingency data are not collected (i.e. questions such as 'is the school at risk of flooding in the coming rainy season', 'is land available for temporary classrooms if required', etc.).

G. Education development partners

EDUTRAC (UNICEF)⁵³

This UNICEF-supported initiative is designed to allow DEOs to monitor education indicators on a more regular basis than the ASC allows. Data are collected from school administrators via a free SMS system and provided to DEOs through a web-based dashboard. The DEOs can then work with the schools to identify issues and response options. During 2015/16, eduTrac was operational in 37 districts throughout Uganda, covering approximately 3,800 schools.

The system collects a variety of data including pupil attendance for primary 3 and primary 6 classes and teacher attendance data. In addition to the regular reporting and dashboard functionality, the system allows for the reporting of 'incidents of violence', which are then referred to the reporting, tracking, referral and response (RTRR) instrument.⁵⁴

In addition to providing data to DEOs, the findings were useful in supporting other development programmes. For example, as part of programmes aimed at building the capacity of school management committees, eduTrac data provided a useful starting point for examining the issues that were affecting individual schools.

It appears that eduTrac is currently not getting funding for scaling up. The biggest challenges were maintaining the system and ensuring that (i) data were received regularly and on time, (ii) dashboards were generated regularly and made available via the web portal and (iii) DEOs had internet access via working computers and staff were able to access and use the system.

STRENGTHENING EDUCATION SYSTEMS FOR IMPROVED LEARNING (DFID)

The SESIL project uses an SMS data collection tool to capture a small number of indicators, based on five core priorities to improve learning outcomes, from primary schools on a monthly basis. The data are then analysed and discussed by decision-makers in schools, local governments and the MoES in Kampala. The data are presented in a Microsoft Power BI digital dashboard at the DEO and central MoES level, while schools develop their own paper-based dashboards. Districts and municipalities in the Eastern and West Nile regions are being covered by the project. Current indicators are:

- **Average learner attendance** for the whole school (by gender) compared to enrolment
- **Teacher attendance** (days of authorized and unauthorized absence)
- **Time on task** (lessons running as scheduled)
- **Student engagement** (percentage of lesson time where 90 per cent or more of students are engaged).

The schools, DEOs and the MoES in Kampala are supported to identify key issues arising from the data and then determine actions that can be taken at each level to help address them.

The dashboard provides breakdowns by district and school, and undergoes continual development to improve the utility of the analysis for each user group.

⁵³ <https://www.unicef.org/uganda/what-we-do/edutracs> (Accessed 1 Oct 2019.)

⁵⁴ This is a Ugandan Government initiative.

Crisis-sensitive utility and gaps

These projects were analysed to look at how successful the use of SMS technology was in terms of supporting development project objectives. Much of the focus is outside the remit of crisis sensitivity, but what is important are lessons learned regarding the utility of the system:

- The SMS systems for both the eduTrac and SESIL projects illustrate how real-time data collection can function in the Ugandan context. Both projects showed high response rates. It is possible that emergency tools could be developed (based on the same software model) that allow reporting of the school's status, damage to classrooms, additional IDP children, etc. These tools could be deployed when needed during emergencies.
- Attendance tracking is also useful in longer-term emergencies such as drought or health epidemics, and a future version will include differentiation between host and refugee learners.
- The web-available dashboard is also a useful tool to provide information; and using the geolocations of schools, it would be possible to develop a dashboard to display emergency information such as schools with damaged classrooms, refugee influxes, etc.

It should be noted that for the SESIL project a staff member was embedded in each of the participating DEOs to facilitate data collection and verification and support action planning. This is a fairly significant resource investment.

V. Recommendations

The following recommendations consider three main areas of intervention. The first area is in support of the current efforts to redevelop and implement the ASC and EMIS. Recommendations in this area are aligned with those of the EMIS Taskforce but also consider the needs and opportunities for supporting better data collection and access to analysis and information at the district level.

The second area of support considers how EiE actors are collecting, analysing and utilizing data and how these efforts can be more closely integrated between actors and with EMIS.

Finally, there is an investigation into the previous EMIS and how it approached statistical analysis, as well as some considerations for possible alternatives for data collection moving forward. Improvements in how the analytical products developed may be better suited to decision-making around policy and budget are also discussed.

SUPPORT TO THE EMIS TASKFORCE

The clearest opportunity to strengthen the Ugandan EMIS is to provide support to the already established EMIS Taskforce. Clearly, a well-functioning EMIS is prerequisite to a crisis-sensitive EMIS. Key actions are already underway addressing several of the findings highlighted in the two recent reviews. This includes addressing the legal and policy framework gaps. As also highlighted in both reviews, the long-term sustainability (through adequate funding) and the technical capacity gap (a lack of dedicated EMIS ICT staff) will need to be solved to ensure a fully functional EMIS.

ICT technical capacity requirement

The requirement for EMIS ICT will to some extent depend on the software solution selected and the nature of the contract for the development and maintenance of the solution. A key issue highlighted within the *EMIS Review 2017 Taskforce Report* was that the MoES was constrained by having the source code owned by a private contractor; therefore, it would seem logical that the MoES would seek to have access to the source code (either an open source system or a system handed over to the MoES).

In either case the MoES would need a cadre of ICT professionals who could maintain the system, dealing with routine maintenance and problems as well as developing and modifying the system. It is normal for all major software projects to have minor problems and require adjustments upon launch.

In addition, the ICT professionals could work with the statistics team to revise and strengthen the analytical outputs of the system.

ASC and baseline

Two key issues can be supported by EiEWG members as well as members of the EDP Group:

1. **Lack of a strong data frame.** Agencies should work with the MoES to develop processes so all schools with which partner agencies interact can be checked to ensure they are on the data frame. This triangulation will help keep the data frame current.
2. **The lack of utility of the data provided by the ASC.** The EiEWG and EDP Group should be included in the process of determining what data are required by the EMIS and how such data can be analysed to support programming and policy-making. As pointed out in the reviews, the previous EMIS was not 'user driven' in terms of the data collected and analysis produced.

Development of the EMIS

The absence of a strong data frame and the lack of utility of the information provided by the previous EMIS are two symptoms of a bigger underlying issue that was highlighted in the EMIS Taskforce reports. The development of the EMIS missed out or did not complete several key steps that should be undertaken with any systems development. Appropriate technical support⁵⁵ is required to undertake a full systems development lifecycle in the re-visioning of the Ugandan EMIS.

In terms of crisis sensitivity, this includes:

- Initial crisis-sensitive elements are introduced where possible.
- The design allows for the expansion and development of the EMIS to include more crisis-sensitive components.
- The data needs and current collection methodologies of emergency actors should be reviewed and these needs (and opportunities for the provision of data by EiE partners) can be factored into the EMIS design.
- Rapid data collection in the event of emergencies (i.e. other than the ASC) should be investigated.

⁵⁵ For example, this could include support from the EiEWG or EDP group, or outreach to members of the regional EAC EMIS group.

EMIS DECENTRALIZATION AND SUPPORT TO DISTRICT OFFICES

The relationship between the EMIS and the DEO will depend on what sort of EMIS is developed. The lack of a dedicated data/statistics officer at DEO level reduces the DEO's capacity to take on EMIS-related tasks.

Stronger links between the EMIS and the DEO

- It is important that the needs and capacities of the DEO are factored into the EMIS design (again, designing the EMIS with the needs of the users in mind).
- Without a dedicated data/statistics officer, DEO capacity is somewhat weak; however capacity is improving as the use of Excel and similar software is becoming more widespread. Effort should be made to build capacity in EMIS data systems and processes at the district level.
- The dashboards provided by the SESIL project have proved accessible and have been well-received at district level. Providing EMIS data through similar web-based dashboards would make data available to the DEOs without the need for a significant increase in capacity or technology. Most DEOs would have the capacity to access a well-constructed online dashboard and interface.

Crisis-sensitive data collection

- For crisis sensitivity, school inspectors should be trained on how any emergency data collection processes work and the tools that would be used.⁵⁶
- It is also important that school inspectors can evaluate preparedness and contingency measures at school level.

Data officers in support of the ERP

In support of the implementation of the current ERP, the recruitment of a data officer is planned for each of the DEOs that have a refugee caseload. This will provide much needed capacity and an interface between EiE partners and the DEOs. The data officer will provide access to data collected by partner agencies regarding the refugee response and provide it to the DEO to support its various planning and decision-making processes. It is important to consider how these officers will link data collected in relation to the emergency and how they are integrated into the bigger EMIS picture (see following sections on alignment of tools). Efforts should be made to avoid running a parallel system for emergency data outside of the overall EMIS (this is covered in more detail in the next section).

CONSISTENCY AND COMPARABILITY OF EDUCATION HUMANITARIAN ASSESSMENTS

Envisaging the EMIS as a single database that holds information collected via the ASC ignores the wealth of data that are collected and analysed from many other sources, especially by EiE partners. Partner assessments could provide a coherent and comparable set of data that is useful for both emergency and development actors. Currently, partners tend to share final reports that are part data, part analysis – and, although useful, that require another methodology to extract the findings. It is also difficult to make direct comparisons from one report to another when many questions, findings, etc. are worded or disaggregated differently.

⁵⁶ It would be useful to determine if there is any policy provision for how data should be collected in emergency situations by DEOs.

Alignment of tools⁵⁷

Work should be undertaken by the EiEWG to align all partner tools as much as possible so that EiE datasets are easily comparable with EMIS datasets. This includes using the same disaggregation methods (such as age ranges), ensuring that categories in questions are worded the same way (e.g. different categories of disability, the reasons children do not attend school, etc.).

Tool alignment should also consider surveys by development partners and the regular household surveys conducted by UBOS. Where multisector assessments are taking place, again the questions and responses should be aligned as far as possible.

This will allow the building of a much more coherent picture and make it easier to identify gaps in knowledge (whether related to geographical area, age, gender or other criteria).

Making data available

Another key issue is making the information available in a format that promotes joint analysis and integration with development datasets (primarily the EMIS). Providing final reports has limited functionality if Uganda is to build a coherent situational analysis of the education sector and its response to emergencies. Provision of cleaned (and if necessary anonymized) datasets (such as those provided by UNICEF as part of its MICS process) would allow easier consolidation and comparison between assessments. Ideally, all EiE assessment data would be directly comparable with EMIS data, (education development partner data collection should follow the same path).

The MoES, especially the DEO, should be engaged to understand their data needs, their capacities to analyse data and how best EiE partners can provide data or analysis to them.

REVIEW OF EMERGENCY EDUCATION MONITORING

Although outside of the recent EMIS reviews, EiE monitoring appears to suffer from a number of similar failings. The current system is very resource intensive, it is not clear how much of the data is used, and some data that are available at school level and could be collected and analysed (such as term test scores) do not appear to be collected or analysed routinely.⁵⁸

There needs to be a much clearer understanding of what data are needed (for what purpose), how often they are required and what degree of accuracy is acceptable.

It is understood that efforts are being made to harmonize data collection tools, but it may be beneficial to take a couple of steps back.

⁵⁷ There is ongoing work as part of a current initiative by UNHCR/ERP Secretariat to align the data collection tools used by UNHCR education partners – an important first step.

⁵⁸ Often different answers were received from partners, UNHCR and DEOs when questions on what data were collected, to whom they were provided and for what were they used. For example, it was reported by partners that attendance data were collected and submitted to UNHCR and DEOs on a weekly basis, DEOs specified that attendance data were collected monthly and UNHCR staff either stated that attendance data were collected on a monthly or termly basis. The only use identified was by partners who stated schools with low attendance were encouraged to do outreach to communities.

- The EiEWG (and IM group) should continue to work to identify the key needs for data in terms of output level, outcome level and impact level.⁵⁹
- Broad guidelines should be agreed for data collection (including frequency of collection, verification, collation, etc.) and the fundamental indicators needed for each of the required levels.⁶⁰
- It should be clear which data are passed on to UNHCR, which data are passed to the DEO and which data are used solely by the partners.
- This work should be undertaken in consultation with the new EMIS development to align the data collection tools and datasets as much as possible. This should include looking to the future and the role of DEOs, as well as whether the EMIS will eventually collect and track emergency data.

RETHINKING AND REVISIONING OF EDUCATION SECTOR ANALYSIS

This section is more of a thought-piece than a recommendation. It discusses how data collection processes can be modified and data analysis strengthened to produce a more cost-effective EMIS that better supports decision-making.

Current analysis based on the mean

The analysis provided in the statistical abstract is detailed and the various tables are calculated using a variety of disaggregated figures, including age and gender. As would be expected, the analysis focuses on the main efficiency ratios used in Uganda as proxies for education quality (the main three being student/teacher ratio, student/classroom ratio and student/stance ratio, but data on adequate seating, textbooks, etc. are also available).

The ratios are calculated by totalling the number of students in a given district (or nationally) and dividing by the total number of teachers/classrooms/stances. While this gives an overall feel for the situation, it hides a lot of the detail at school level. In fact, the implication for the unwary reader would be to assume that most schools will appear close to this ratio.

A simple example is to consider three schools in a parish with student/classroom ratios of 60:1, 40:1 and 65:1. If student numbers are equal across the schools, the parish ratio would be 55:1. Consider another parish with three schools with student/classroom ratios of 30:1, 35:1, 100:1, (again, with equal numbers of student in each school); the overall ratio here would also be 55:1. However, nowhere in this second parish will you see a school with an overall student/classroom ratio near to this.

An interesting analysis might be to see how many schools fall into certain bands for the efficiency ratios, for example:

Figure 2. Possible analysis of schools falling into efficiency ratio bands

Student/classroom ratio	<30:1	31:1 40:1	41:1 50:1	51:1 60:1	61:1 70:1	71:1 80:1	>80:1
# schools district X	2	3	9	8	6	4	2

Source: Author

⁵⁹ The ERP log frame and the updated ECW log frame are key documents that help to clarify data needs. They were revised and aligned in November 2019.

⁶⁰ Consultations at district level are currently taking place to move this forward.

This would indicate that 12 schools are in urgent need of support with classrooms, and 8 more are close to the correct ratio but may need support.

It would also be interesting to plot transition rates against student/classroom or student/teacher ratios. In fact, an index could be developed to see if there was a correlation between low transition rates and high classroom ratios. Cases where schools did not follow observed trends could be studied more closely – whether for purposes of targeting interventions or identifying good practice.

These data are all contained within the current collection tools so require no more data collection. The transaction costs for producing such analysis are therefore relatively light and the analysis could be used for comparison from one year to the next.

School level compared to class level

Another area where data are available but not presented in the Statistical Annex is calculation of efficiency ratios at class level. Currently, school enrolment is reported by class (e.g. P1 to P7 – see Fig. 3), however the efficiency ratios are only calculated by school (see Fig. 4).

Figure 3. Primary Enrolment for Acholi Region by District and Class (P1 to P7)

REGION	DISTRICT	P1		P2		P3		P4		P5		P6		P7		Overall		Total
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
ACHOLI	Agago	8935	8908	6421	6445	6165	6254	6356	6665	6360	6381	5589	4944	3166	1997	44 992	41 594	84 586
	Amuru	4894	4916	3473	3407	3722	3487	4248	4472	4851	4820	3096	2484	2322	908	26 606	24 494	51 100
	Gulu	10 386	10 317	8371	8553	9598	9468	10 800	11 465	9905	10 485	7219	6857	4638	3482	60 917	60 627	121 544
	Kitgum	5782	5482	4146	4039	4535	4568	4807	5205	4280	4306	3512	3219	2315	1631	29 377	28 450	57 827
	Lamwo	4172	3980	3323	3275	3430	3373	3999	4140	3171	3403	2926	2610	1800	1114	22 821	21 895	44 716
	Nwoya	2710	2619	2131	2206	2366	2344	2674	2829	2323	2329	1831	1538	1104	659	15 139	14 524	29 663
	Pader	6150	6201	5162	5168	5102	5000	5481	5459	5299	5131	4338	3743	2598	1647	34 130	32 349	66 479
Acholi Total		43 029	42 423	33 027	33093	34 918	34 494	38 365	40 235	36 189	36 855	28 511	25 395	17 943	11 438	231 982	223 933	455 915

Source: ADEA and Uganda Ministry of Education and Sports, 2017

Figure 4. Primary Efficiency ratios for Acholi Region by District

REGION	DISTRICT	PTR			PCR			PSR		
		Government	Private	All	Government	Private	All	Government	Private	All
ACHOLI	Agago	84	69	82	77	62	75	57	80	59
	Amuru	74	39	64	83	51	75	60	60	60
	Gulu	48	25	43	66	35	60	48	26	44
	Kitgum	53	31	50	57	55	57	40	49	40
	Lamwo	66	25	62	65	32	62	53	33	52
	Nwoya	62	30	54	65	47	62	51	28	46
	Pader	86	34	80	78	33	73	62	44	61
Acholi Total		63	33	58	69	44	66	52	40	50

Source: ADEA and Uganda Ministry of Education and Sports, 2017

It is clear from the charts that P1 enrolment (approximately 85,500) far exceeds P6 (45,000) and P7 (28,000). Dividing the number of children in a school by the number of classrooms at a school does not generally give an accurate picture of what a typical class looks like. If the children are evenly spread across the grades, it could be assumed at most schools this would be the case (there would be exceptions); but the Ugandan dataset shows that differences are significant and therefore class sizes for the lower grades are likely higher than for the upper grades.

Again, most of these data exist in current tools, or require small modifications (e.g. how many P1 streams in a school, as often there will be more than one if numbers are high). This would be useful data for giving the real picture of how many classrooms meet the target student/classroom ratio of 53:1.

These examples illustrate that the former EMIS collected a wealth of information that could lead to more in-depth analysis for policy-making and planning. If some of the shortcomings identified in the reviews could be addressed, the current data model is very rich. However, what data are needed and how they should be analysed were key steps that the reviews indicated were not completed in previous EMIS designs; it would be advisable to avoid the same mistake.

Data collection frequency and methods

The proposed model for 2020 envisions teams of independent data collectors using mobile data collection tools to conduct the ASC. As previously outlined, this will deal with several the issues flagged with the previous EMIS but suffers from being a very resource-intensive – and therefore, costly – exercise.

One consideration is how often such an exercise is required. Perhaps one solution would be to undertake a comprehensive, independent ASC every three or four years, using the previous methodology (potentially, with condensed collection tools) during the other years. It would be harder to exaggerate needs and enrolment as there would be an independent baseline every three to four years. The other main problem (the data frame) is independent of whichever methodology is used. School inspectors could undertake spot checks to support triangulation, etc. Until such a time as DEOs can use mobile data collection to undertake the ASC, this blended approach may offer a reasonable alternative as a cost-effective solution.

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Annex 1: Ugandan EMIS

EMIS development from 1999 – 2016⁶¹

EMIS development in Uganda has a long-term history of support:

EMIS 1 (1999 – 2001)

This World Bank-supported project aimed to introduce EMIS at the central level and support the decentralization of EMIS to the district level. Data collection for the EMIS was based on an annual school census and the main output was the yearly statistical abstract.

GLOCAL ED*ASSIST software was installed to support the EMIS. A major challenge was the discrepancy between UBOS population estimates and the enrolment figures produced by the ASC.

EMIS 2 (2001 – 2003)

Supported by DFID, the project focused on sustainability, increased access to EMIS data, and its presentation to support planning and monitoring (this included installation of a LAN), as well as provision of computers with EMIS in several districts. Response rates in 2002 had risen to 98 per cent and 95 per cent for government-run primary and secondary schools respectively.

EQUIP2 EMIS (2003 – 2005)

This USAID-funded initiative included the first comprehensive GIS mapping of schools in Uganda. Additional datasets were introduced to the EMIS including the calculation of survival rates and P7 completion rates. A report outlining the possible implementation of a WAN to connect the central EMIS to DEOs was produced.

Maps were produced for districts showing the location of schools. This could be colour-coded to indicate good and bad schools in terms of efficiency ratios.

Significant data on teachers were recorded and this allowed some reallocation to take place at the district level.

EMIS (2006 – 2009)

In 2006, UNESCO UIS supported the MoES Planning and Data Unit to install UIS software to replace the previous system. UIS software was available free of charge and was served based (GLOBAL ED*ASSIST was based on an individual ACCESS database). It allowed the hosting of multiple years data in one database (as opposed to previously, when each year's data was housed within a separate database).

Although the yearly census figures continued to be produced, response rates dropped during these years.

EMIS (2010 – 2016)

The MoES contracted the Agile Learning Company to develop a bespoke EMIS with the support of USAID.

⁶¹ This section is based on Bernbaum and Moses.2011. *EQUIP2 Lessons Learned in Education: Education Management Information Systems*. Washington, DC, FHI 360, pp. 76-87.

The project included several phases and with a new school mapping exercise and the role out of the EMIS software to district level (with the installation of the Agile DEMIS in each of the nation's 139 district education and municipal education offices⁶²).

The system continues to use the ASC as the main data source for populating the EMIS. Statistical abstracts are available for 2009 – 2016 inclusive.

EMIS 2017 - Current⁶³

The MoES has undertaken the ASC to provide data to facilitate planning, decision-making, monitoring and evaluation, policy formulation, as well as budgeting. Following recent reviews of the available data and associated methodologies, it was realized that the data has some shortcomings.

In a bid to provide relevant and usable education statistics, the Uganda Bureau of Statistics (UBOS) and the Ministry of Education and Sports (MoES), during a meeting held on 21 September 2017 at Statistics House, agreed to work together and develop a master list of education institutions: pre-primary, primary, secondary, and post-primary (i.e. vocational and tertiary) levels in the country. It was further agreed that the master list development process would be followed by undertaking a comprehensive baseline data collection exercise.

In 2017, a task force was constituted by the Permanent Secretary of the MoES to review the Education Management Information System (EMIS) that would lead to a robust and reliable EMIS capable of providing quality and timely information. This task force completed its work in February 2018 making five broad recommendations on EMIS development.

These included: (i) Strengthening of sector support, and legal and policy framework for EMIS; (ii) construction of a sampling frame; (iii) undertaking of a comprehensive baseline data collection exercise using a methodology that guarantees quality data; (iv) re-engineering and development of EMIS Software Solution, as well as (v) development and operationalization of an EMIS communication and dissemination strategy.

Roadmap to a new EMIS

Based on the report and findings the MoES developed a roadmap towards a new EMIS solution. But it was not until 2019 that the government and development donors agreed to support its implementation.

The MoES then developed a 'strategy for the comprehensive education institutions baseline data collection exercise', which aimed at delivering on the second and third recommendation from the report.

Work began with support from DFID in developing a sampling frame and the countrywide mapping of all education institutions was completed in October 2019.

The World Bank is supporting phase two of the process, which is the gathering of baseline data from all the education establishments. This is roughly in line with the former annual census although all tools are being revised and electronic versions created to enhance the quality and speed of data collection.

⁶² <https://agilelearning.com/programs>. (Accessed 29 October 2019.)

⁶³ Based on Uganda Bureau of Statistics (2019), Strategy for the comprehensive education institutions baseline data collection exercise.