

SCOPING REVIEW OF THE LEGISLATIVE AND POLICY ENVIRONMENT ON SUB-NATIONAL AND NATIONAL DATA SYSTEMS AND DATA USE

Uganda Report

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1 Abbreviations and Acronyms

APHRC	African Population Health Research Center
CAO	Chief Administrative Officer
CG	Central Government
CIS	Community Information System
COVID-19	Coronavirus Disease 2019
CSO	Civil Society Organization
DHS	Demographic and Health Survey
EHR	Electronic Health Record
EMIS	Education Management Information System
EMR	Electronic Medical Record
FY	Financial Year
GBVMIS	Gender Based Violence Management Information System
HLLG	Higher-Level Local Government
HMIS	Health Management Information System
HRIMS	Human Resource Management Information System
HSDP	Health Sector Development Plan

IFMIS	Integrated Finance Management Information System
IGG	Inspector General of Government
IPPS	Integrated Personnel and Payroll System
JLOS	Justice, Law and Order Sector
LG	Local Government
LLG	Lower-Level Local Government
MDAs	Ministries, Departments and Agencies
MFPED	Ministry of Finance, Planning and Economic Development
MOES	Ministry of Education and Sports
MOH	Ministry of Health
MOWE	Ministry of Water and Environment
NBI/EGI	National Data Transmission Backbone Infrastructure and e-Government Infrastructure
NDP III	National Development Plan - Three
NITA - U	National Information Technology Authority - Uganda
NPA	National Planning Authority
NSS	National Statistical System
OPM	Office of the Prime Minister

OVMS	Orphans and Vulnerable Children Management Information System
PBS	Performance Budgeting System
PNSD III	Plan for National Statistical Development - Three
RUWAS	Rural Water and Sanitation
SPS	Strategic Plan for Statistics
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shilling
UNHS	Uganda National Household Survey
UPMIS	Utility Performance Monitoring and Information System
WASH	Water, Sanitation and Hygiene

2. Executive Summary

Uganda has a robust legal and policy regime governing its National Statistical System. The Uganda Bureau of Statistics (UBOS) Act of 1998 which established the bureau was one of the first statistics laws to be promulgated in the East African region. The Act (currently under review to cater for latest developments in the world of data and statistics since its inception) defines the National Statistical System and the role of different stakeholders in it, the rules guiding production and dissemination of official statistics, quality assurance and the boundaries of access to data.

UBOS's comprehensive, highly participatory, and devolved Plan for National Statistical Development (PNSD) is a five-year rolling blueprint for modernizing data and statistics in the country. It provides a framework for ministries, departments and agencies (MDAs), administrative districts, civil society organizations, and, more recently, cultural institutions¹ to develop their own strategies for statistics with support from UBOS. These strategic plans are supposed to be aligned to the National Development Plan (NDP).

Data Governance (the process of managing the availability, usability, integrity and security of the data in the NSS) is also vigorous. Uganda was one of the first African countries to pass the Access to Information Act in 2005. The country also has a data Protection and Privacy Act (2019) and has established guidelines on several elements of the data value chain, including the conducting of surveys, usage and reproduction of data², micro-data access and data sharing.

The country is also signatory to a host of regional and international protocols on data and statistics, including the Africa Data Charter, the Strategy for the Harmonization of Statistics in Africa, the UN Fundamental Principles on Official Statistics and Agenda 2063 which is the African Union's vision for the continent's developmental transformation. Many of the principles outlined in these regional documents have been embedded in the country's policy and legal framework for data and statistics. The country has embraced the open data movement and the data revolution agenda. Uganda has also localized the Sustainable Development Goals and their indicators are tracked as part of the country's monitoring and evaluation framework.³

Uganda has participated in international events that aim to improve data production and use such as the annual United Nations World Data Forum⁴, the annual Africa Statistics Week⁵. The country has also held national events such as the High-Level National Data Forum⁶.

In terms of data production, a significant amount of data exists in Uganda especially at the National level. The national census is usually done every ten years although there

¹ <https://businessfocus.co.ug/ubos-buganda-ink-partnership-to-establish-kingdoms-statistical-unit/>

² <https://www.ubos.org/about-us/guidelines-on-usage-and-reproduction-of-data/>

³ An SDG governance framework is fully functional with a secretariat in the Office of the Prime Minister, and UBOS chairs the SDGs technical Working group on Data. Most SDG indicators are part of the National SDG Indicator Framework.

⁴ <https://unstats.un.org/unsd/undataforum/index.html>

⁵ <https://www.ubos.org/ubos-celebrating-the-africa-statistics-week-from-12th-november-to-21st-november-2020/>

⁶ <https://www.ubos.org/hlndf/>

may be some instances of delays, and major household surveys are normally conducted on time. Most ministries and departments collect routine administrative and programmatic data, mainly with the support of donors.

Despite the progressive picture outlined above, Uganda's national and sub-national data ecosystem still faces significant challenges.

For instance, the extent to which the policies above are implemented is still limited. Some of the seemingly progressive laws and policies are occasionally negated by other opposing laws in the country, such as the colonial-era Official Secrets Act of 1964 that is still on the books, the Public Service Standing orders⁷ which limit civil servants' rights to release information, and the 2011 Computer Misuse Act whose enforcement is often abused.⁸

The nature of the country's political economy has also led to the creation of multiple MDAs and districts which has led to a dramatic increase in the cost of public administration, constraining the amount of resources available for strengthening data systems especially in key social sectors such as health, education, agriculture and social welfare.⁹

Multiple administrative units have also led to data silos, with each department creating its own data and information management system which ends up replicating another in a different agency, wasting limited human and financial resources.

While investment in data systems has improved over the years, it is still limited. Most administrative data systems in MDAs for example are funded by donors, imperilling sustainability. Some districts are unable to recruit technically competent statisticians and data analysts, and data dissemination is still largely done through non-digital methods with printed papers and books.

The data use culture in the country especially in government structures/agencies is still limited and several stakeholders in the data production community have expressed frustration at the limited demand and use of statistics in decision-making, especially within the country¹⁰

The proliferation of technology and ICT infrastructure in the country, however creates opportunities to increase data production, demand and use especially at the sub-national level. The government's rural electrification program is extending the national electricity grid to more rural areas, and an ambitious, fibre-optic cable project is connecting more districts and service points to the internet, databases, and other national digital infrastructures. This bodes well for the data revolution in the country in the coming years.

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<https://www.publicservice.go.ug/media/resources/Public%20Service%20Standing%20Orders%20for%20Printing%20New.pdf>

8

<https://www.unwantedwitness.org/the-computer-misuse-act-ugandas-redundant-law-but-the-states-tool-for-online-repression/>

⁹ <https://www.acode-u.org/uploadedFiles/PRS27.pdf>

¹⁰ Interview with UBOS

Summary Recommendations

APHRC has started on the right foot by seeking to understand the policy environment. Going forward, a full diagnostic of all relevant data infrastructure needs to be conducted, an undertaking that the limited time available for this process did not allow. APHRC should then rally the key stakeholders in the NSS to build a coalition of data advocates to call for more source investments in the data ecosystem, the hiring of more technical staff, and strengthening of public-private partnerships that will foster knowledge sharing and systems integration and strengthening, while improving the data use culture.

The following interventions are recommended for policymakers, donors and other stakeholders interested in bolstering Uganda's sub-national data ecosystem:

Issue/Challenge	Proposed intervention	Policy-makers	Donors	CSOs/Think-tanks/Techies
Policy implementation	More good faith enforcement and implementation of the robust laws and policies respectively, that govern the NSS and related thematic areas	- Review the design of some of the policies for easier implementation. - Establish and strengthen policy implementation units in key MDAs	Support regular and periodic policy reviews targeted at data-related policy and legislation	- CSOs: establish collaborative projects on policy implementation advocacy - Share expertise on technical aspects of some of the legislation
Data silos	- Efforts should be made to harmonize all the information systems by making them interoperable so that technical officials can systematically access each other's data and make access to outside stakeholders easier. This should be done both at national and sub-national levels - Intensify coordination among donors, their MDA and district recipients before they fund the establishment of new information management systems	- Fast-track the master-plan on E-government developed by NITA-Uganda which intends to harmonize government databases - Extend the technical and physical infrastructure that enables interoperability to more districts and service points - Explore public-private partnerships to support systems integration	Establish a sub-committee on data financing at the LDPG to ensure better coordination among funders of data and statistics in the country to avoid duplication	Techies and data scientists in the private sector should team up with MDAs to improve data interoperability

Limited capacity of human resources	• Hire district statisticians for the districts that do not have them • Employ more IT officers in districts. Evidence from this research shows that districts with IT and statistics officers, trained appropriately in these fields, have more data and information visibility, have better data management and sharing practices and are more accessible to the research community and other data users • Build more partnerships among districts that are doing better on data production and sharing, through exchange visits and sharing of experiences • Collaborations with local academic, research and civil society communities will boost districts' capacity to manage the data value chain, through knowledge sharing and learning • Improve civil service remuneration	• Government should revise the civil service structure and include data science and ICT-related positions to enable the civil service to meet the needs of 21st century public sector service • Invest more resources to fill staffing gaps especially in NSS-related jobs • Decentralize UBOS as an agency, expand zonal offices and establish district branches countrywide • Retrain existing staff in aspects of new fields such as data science and IT	• Allow more room for MDA recipients of aid money to hire technical staff and improve their remuneration • Lend some of the expertise in donor agencies to offer technical support and build capacity especially at district level	Think-tanks and CSOs should collaborate with neighborhood government agencies, local administration institutions, media and academia to share skills and experiences with local government staff as well as strengthen local capacity
Limited data use culture	• Publish data in easy to use, 'open' formats rather than in big books/reports whether hard or soft copies. • Embrace open data and the data revolution agenda • At the sub-national level, hold data-user fairs to showcase existing data and reach out to data users in academia and the civil society community • Revamp and consistently update district websites	• More sensitization of policy makers on the importance of data in policy-making • Invest in capacity building for data interpretation and synthesis • Organize data use fairs at national and sub-national levels to highlight the importance of data • Reduce roadblocks to easy data access such as complicated bureaucratic processes, unfriendly laws and	• Support efforts to simplify complicated data and datasets such as through development of dashboards • Support and promote regular interactions between data producers and users through workshops for instance	• Think-tanks should share experiences on data access and use with a wide variety of data stakeholders who have less experience and resources for accessing data • Think-tanks should also expand their knowledge sharing beyond the realm of academia into communities and share their evidence in vivid,

		guidelines to data access		less academic terms
Limited funding	• Invest more funds from the national budget to data and systems strengthening • Direct more financial support to districts, especially planning units to invest more in data collection at lower levels of district administration	Make a strong data ecosystem one of the development priorities at macro- (national) level and earmark more funding to data producing institutions across the government ecosystem	Support for data collection should be well balanced between national and sub-national stakeholders so that one does not come at the expense of the other	• Share resources available with less connected local government data producers and users • Explore sub-granting funds to districts and district-based CSOs to improve their data collection and use capacity

3. Background

This scoping review commissioned by the African Population and Health Research Center (APHRC) sought to understand sub-national and national data dynamics in Uganda. These findings aim to inform processes that seek to promote the use of evidence in planning and decision-making in Uganda. The process intended to cover the following aspects:¹¹

- I. A review of the country's socio-political environment especially policy and legislative frameworks, their linkages to data systems as well as the data use culture at the sub-national level.
- II. A review of the existing data systems in terms of structure, data demand and supply, data integration and data use practice in country sub-national units.

The rationale of the scoping review is grounded in the reality that monitoring progress and tracking performance for evidence-based decision-making, particularly at sub-national levels in Africa is increasingly becoming an important part of the development process. This requires the existence, and utilization of robust systems to satisfy the demand and supply needs in the data ecosystem. This includes novel approaches to the description, collection, storage, integration, analysis and use of large, heterogeneous, structured, and unstructured data sets – both at the sub-national and national levels.

A scoping review of the legislative and policy environment on sub-national and national data systems and data use in Uganda would therefore provide insights into the workings of the national and sub-national data ecosystems as well as how they influence decision-making and inform policy process linkages between sub-national and national levels.

Objectives

The study sought to understand the following attributes of a good data ecosystem:

1. National and sub-national legislation, policies, guidelines and frameworks that mandate and guide data collection, analysis and use at sub-national and national levels.
2. Political support for data from the leadership both at national and sub-national levels.
3. Citizen participation in data validation exercises such as performance spot checks and citizen feedback.
4. How data demand and supply advocacy take place, how data production and use are mainstreamed at national and sub-national levels.
5. Data generation and use as a cross-cutting practice in the development process at all levels, including data dissemination, evidence-informed decision-making and policy formulation processes.

¹¹ This information is derived from the Terms of Reference.

6. Presence or absence of partnerships for strengthened data systems at the national and sub-national levels, development of human capital and prioritization of user needs, as well as ability to attract sustained sector funding and investments.

The findings of this review are expected to contribute to understanding the capacities of sub-national and national governments in terms of data and data systems with respect to:

- Institutional capacity
- Regulatory capacity
- Technical capacity
- Infrastructure and human resources (integrated data systems and skilled workforce)
- Availability of sustainable resources for data use and evidence-informed decision-making
- The national data ecosystem, especially existing systems for evidence-informed decision-making at the sub-national levels

4. Methodology

The Uganda scoping review sought to understand the national and sub-national data ecosystems as well as their roles in informing decision-making. A diagnostic approach was used to develop an understanding of the governance and challenges facing the national data ecosystem. This involved the following steps:

4.1 Pre-Research

A list of potential key informants was drafted based on the researcher's prior knowledge of the data landscape and based on the Terms of Reference. Research tools were also developed and the possible theme-based legal and policy documents for review were scoped online in preparation for the research.

Ahead of the research, a meeting was held with the Uganda Bureau of Statistics (UBOS) as the coordinating agency in charge of the NSS, to discuss the research and its objectives, seek advice on the planned approach, methodology and tools and to explore ways of scoping and reaching out to sub-national data stakeholders.

Following the meeting with UBOS, the approach was revised as follows:

- Six districts were selected, based on recommendations from UBOS, to be used as case-studies to understand the general state of the data ecosystem at sub-national level. UBOS provided names and contacts of key staff in charge of data and statistics in those districts and also introduced the consultant to these officials which made it easier to reach out to them and gain their participation in the study.
- The selection of these districts was based on an assessment by UBOS of the districts' participation in the development processes for district statistical plans, operational status of district statistical committees, the geographic regions in which they are located and their recent socio-economic indicators in order to control for skewed perspectives and findings emerging from these sub-national units as well as to ensure representativeness of the research and its findings.
- UBOS has previously mapped Uganda into 'statistical regions' that the agency uses when doing major data collection activities such as National Household Surveys and Consumer Price Indices to control for data noise in the findings and ensure proper national representativeness of the findings. It is from these regions that a sample of the districts was selected. They included the following:

Region	Districts
Central	Kyankwanzi Mityana
Western	Hoima

4.2 Desk Research

This step involved examining different aspects of the country's data governance and the data value chain along the following themes:

Data Governance:

The following sub-themes were examined under data governance:

1. A review of the National and Sub-national Legal and Policy Frameworks that underpin the National Data Ecosystem.

National and sub-national policies were examined to determine the extent to which they enable the functionality of the data ecosystem and processes on the data value chain such as data production, data access, data sharing, data demand and data use. The political economy that informs the promulgation and implementation of these policies was also explored. The legal and policy documents reviewed included the Uganda Bureau of Statistics Act (1998), the Data Protection and Privacy Act (2019), the Access to Information Act (2005), the Open Data Policy (2016), and the National M&E Policy. Also reviewed were sub-national documents such as district statistical abstracts, district strategies for the development of statistics, and districts development plans.

Whereas most of the national documents were easily available online, some of the sub-national ones were not and had to be accessed via phone and email requests by the researcher.

2. Understanding the National and Sub-national Statistical System:

This involved examining the different stakeholders who make up Uganda's national and sub-national data ecosystem, their roles and relationships with each other, and the challenges they face as well as opportunities in the ecosystem. Vertical and horizontal partnerships and dynamics were examined based on the following indicators:

Capacity: The technical, financial, and human capacity of different stakeholders and systems in the data ecosystem were examined with the intention of identifying the major challenges and how they can be addressed. This included looking at staffing, financial investments and the technological capabilities of national and sub-national elements of the data ecosystem.

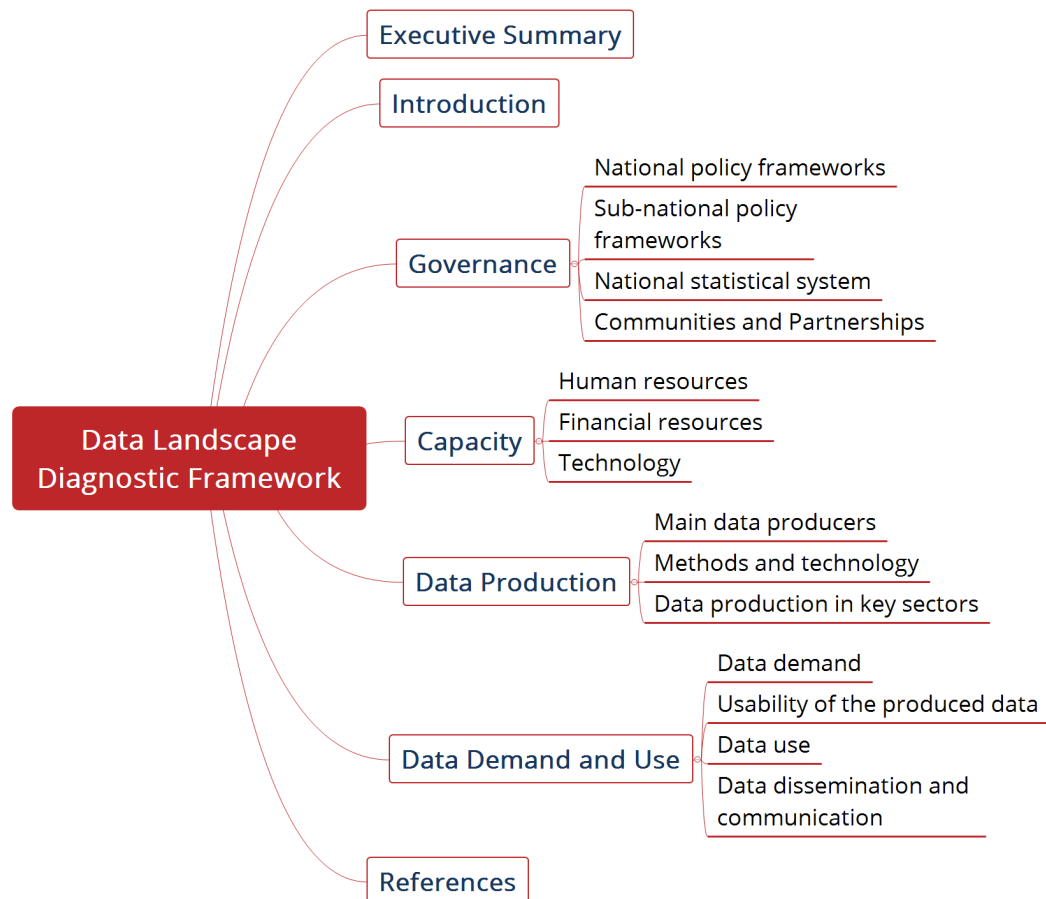
Understanding the data value chain: an effort was undertaken to understand the key realities at every stage of the data cycle, from production to use and feedback. An examination was done of major elements of the data cycle including:

- **Data Production:** This entailed analysis of the main data producers, the major data systems, the main methods and technology involved in data collection and the challenges and opportunities that exist. This was based on pre-selected themes which included health, education, social development and water, sanitation and hygiene (WASH).
- **Data Demand and Use:** The rate and nature of demand was explored as well as data use culture, dissemination and communication protocols, data quality and usability.

Recommendations were then made based on the findings from these dynamics of the data ecosystem. These recommendations were structured according to theme and stakeholder relevance to make them more actionable.

A data ecosystem diagnostic tool was developed to inform the organization, flow and execution of this approach as follows:

Fig 2: Data Landscape Analytical Framework



4.3 Thematic Scoping of the Study

The following themes were focused on to conduct a brief scoping of key data systems operational in the districts and at the national level. They were chosen based on the thematic focus and goals of the National Development Plan which include:

- Health
- Education
- Economy
- Social development
- Water, sanitation and hygiene (WASH)

The goal of the third National Development Plan (NDP) for Uganda is “Improved Quality of Life of Ugandans”. The NDP’s expenditure strategy focuses on continued investment in public infrastructure while balancing this with social sector spending, especially focused on health and education. One of the plan’s objectives is to improve population health and safety by “strengthening population planning and development including civil registration, vital statistics registration and population data bank at national and sub-national levels”¹³.

Foundational Systems

These sectors were also selected because they form what the United Nations (UN) Statistics Division calls “Foundational Systems”¹⁴ for any strong NSS. Data infrastructures normally stand the best chance of thriving when plugged in to the most common built infrastructures: schools, clinics, civil registries, and local government offices. If civil registration, health, education and public financial management information systems can secure a foothold, then a fertile ecosystem of resource and capacity is created for other systems (for social protection and gender equality systems) to feed off.

It is for this reason that this scoping study focused on these thematic foundational systems in its quest to understand the weaknesses and strengths of existing data systems in Uganda.

- In future however, APHRC should support a more comprehensive diagnostic that will include the mapping of data landscapes in other sectors such as environment and climate change, agriculture, **CRVS**, humanitarian and **DRR** systems, as well as poverty and vulnerability.

4.4 Key Informant Interviews

Key informants were purposively drawn from government ministries, departments and agencies (MDAs), civil society organizations (CSOs) and/or think-tanks working on the issues relevant to the scoped thematic data systems mentioned above. At national and

¹³ NDP III

¹⁴

<https://www.un.org/en/chronicle/article/race-innovate-development-should-not-leave-foundational-data-systems-behind>

sub-national levels, these key informant interviews (KIIs) were interviewed using a pre-designed question guide (appended in Annex 4). Most of the interviews were done remotely by phone and online due to the COVID-19 restrictions that were in force during the study period.

In total, ten representatives of national MDAs representing UBOS, Ministry of Finance and Economic Development, Ministry of Education, Ministry of Water and Environment, Ministry of Gender, Labour and Social Development, and the National Planning Authority were interviewed. Additionally, five district data officials and six representatives of non-state actors, including CSOs and academia and two from donor institutions were interviewed, giving a total of 23 respondents who participated in the interview process. A list of KII respondents is appended in Annex 1.

5. Findings

It would be difficult to attempt to understand the data ecosystem of Uganda without viewing it within the wider lens of the country's socio-political and economic background.

Data is an integral part of the governance and decision-making of any country. The quality of data systems are inextricably linked both to the political and technical decision-making processes that involve resource allocation and the political will to base development decisions on evidence. Understanding a country's socio-political, economic and development state, therefore provides a good background to eventually understanding its data ecosystem.

6. Data Governance

6.1 National Legal and Policy Framework

Overview

The major policy governing the NSS in Uganda is the Plan for National Statistical Development (PNSD).

The current PNSD runs from 2021-2026 and its theme is ‘Innovation, Modernization and Transformation of the National Statistical System’ which is based on an “unprecedented increase in demand for development data in terms of scope, quantity, quality and disaggregation; emerging new data ecosystems and non-traditional data sources; emerging partnerships for development data; and the “data revolution” which, inter alia, calls for open data; and new and innovative technologies.”¹⁵ The PNSD III is also aligned to the 18 Programme Areas of the NDP III (FY2020/21 to FY2024/2025) to maximize the synergy between the two comprehensive national planning documents.

The PNSD III is focused on sub-national levels as building blocks for the NSS. The ‘Parish model’ approach seeks to ensure that the data value chain is comprehensively disaggregated to at least the parish level. The UBOS now mandates all districts to develop a district strategy for the development of statistics using the PNSD format. Ministries, departments and agencies have done the same, while other key organizations including cultural institutions (e.g. the Kingdom of Buganda and Bunyoro) have also developed PNSDs. Through its Department of Statistical Coordination, UBOS is supporting CSOs and some private sector organizations to also develop their PNSDs. This is all part of its mission to make the NSS truly expansive and reflective of all relevant national stakeholders.¹⁶

Plans and policies however are all subordinate to legislation. The supreme law in the country that governs data and statistics is the UBOS Act of 1998.

6.1.1 Uganda Bureau of Statistics Act

The *Uganda Bureau of Statistics Act of 1998*¹⁷ established UBOS and defines the National Statistics System (NSS) to include:

... all agencies in Uganda, whether Government or not; under any enactment or otherwise; responsible for gathering statistical data through either surveys or administrative action.

¹⁵ Foreword to NDP III

¹⁶ Interview with UBOS; Review of PNSD III

¹⁷ <https://ulii.org/ug/legislation/consolidated-act/310>

The Act goes further to designate UBOS as the coordinator of the NSS and responsible for:

promoting cooperation, coordination and rationalization among users and providers of statistics at national and local levels to avoid duplication of effort and ensure optimal utilization of scarce resources;

On oversight, the law mandates UBOS to:

“review all initiatives to collect data at the national and local government levels and approve instruments developed for data collection including census frames, registers, sample designs and questionnaires.”

The Act also requires the UBOS Executive Director to:

“ensure that any statistical data collected, after appropriate processing and ascertaining its quality for accuracy, and also after ensuring confidentiality with respect to any individual who provided any statistical information to which section 19 relates; is released for general dissemination.”

The UBOS Act is currently undergoing review as it is considered to have been overtaken by events such as advances in technology and the expansion of the NSS to include new stakeholders.

6.1.2 The National Development Plan

The government’s main development blueprint is the NDP, currently in its third iteration (NDP III). This is an ambitious five-year rolling plan that sets out key development priorities and how to achieve them. The current NDP III runs from 2021-2026, and its theme is “A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years”, with the goal of “Increased Household Incomes and Improved Quality of Life for Ugandans”¹⁸

The NDP has an implementation strategy that specifies how its objectives will be achieved. It also has a monitoring and evaluation (M&E) strategy, a results framework

¹⁸ http://www.npa.go.ug/wp-content/uploads/2020/08/NDPIII-Finale_Compressed.pdf

and a National Standards Indicator Framework, produced by the UBOS to measure and monitor progress.

The NDP is the overarching planning document for the entire country and all other sectoral and local government policies and plans must be aligned to it. The National Planning Authority requires all sectors and local governments to ensure that their planning is aligned with the NDP and assesses them based on a set of indicators before they can be approved. Those that meet the NDP benchmarks are issued a certificate of compliance and allowed to proceed with their policy and planning documents.

The NDP is, in theory, the outcome of all the sub-national planning process which starts at the village level with citizens' identification of their development aspirations.

6.1.3 National Monitoring and Evaluation Policy

The 2011 National Policy on Public Sector Monitoring and Evaluation¹⁹ focuses on better government M&E by strengthening the coverage, quality and usefulness of public policy and investment assessments. Produced by the Office of the Prime Minister (OPM), it proposes that M&E funding is allocated in the national budget. It also aims to give legislators, policy-makers and decision-makers better access to reliable evidence, and to hold the public sector accountable for allocating and using resources.

The policy is intended to improve M&E coordination between public and private institutions. It also sets out the roles and responsibilities of different government MDAs. In 2015, the OPM enacted the National Coordination Policy, which spells out the national coordination framework, together with the roles and responsibilities of each MDA.

The National Partnership Policy of 2013 sets out the guiding principles and priorities for government relationships with external development partners. These include ensuring alignment, maximizing impact, mutual accountability, value for money, transparency and predictability, reducing costs, inclusivity and coordination.

6.1.4 National Standards Indicator Framework²⁰

The UBOS brought together three key government agencies - the National Planning Authority (NPA), the Ministry of Finance, Planning and Economic Development (MoFPED) and the Office of the Prime Minister (OPM) - to develop a common set of indicators for use by MDAs and the local government, in line with the NDP and development frameworks such as Uganda's Vision 2040, the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063.

Uganda was one of the first countries to align its national planning to the SDGs as well as a range of other regional and international processes. The National Standards Indicator Framework (NSIF) is based on the overall goal and objectives of NDP II and the various regional and international development frameworks to which Uganda is a signatory. The NSIF is designed as a tool that enables better performance measurement by the OPM; to

¹⁹

https://usaidlearninglab.org/sites/default/files/resource/files/Attachment_J.15-_M%26E_Policy_Final_Draft.pdf

²⁰

<http://budget.go.ug/budget/sites/default/files/Annex%20a-National%20Standard%20Indicator%20Framework.pdf>

inform planning led by the NPA; to inform resource allocation by MoFPED, and to guide UBOS on the data gaps to address and surveys to undertake. As the NSIF's overall aim is to produce consistent and comparable indicators, it is regularly reviewed to ensure it is up to date.

6.2 Sub-national Legal and Policy Framework

Sub-national units also develop their own legal and policy documents to guide their data and planning work.

6.2.1 District Development Plans

The five-year district development plans are a legal requirement for all higher and lower-level local governments in Uganda. They form a baseline tool for tracking the implementation of government programs and the basis of controlling the pace and direction of development investment. These plans elicit and take stock of issues identified at lower-level local governments. These are then integrated into the district expectations which inform the National Development Plan as required by Article 190 of Constitution of the Republic of Uganda 1995, which is further operationalized in the Local Government Act, **Cap 243 Section 36 and 78**. Formulating the district development plan is a function of the District Technical Planning Committee in collaboration with the District Executive Committee.

6.2.2 Local Government Strategic Plan for Statistics

As part of the Plan for National Statistical Development which provides a framework for statistical development in Uganda, districts are mandated to develop their statistical plans laying out their priorities for robust data collection and use.

Districts also have within their structure, a District Statistics Committee that works closely with the District Planning Unit to spearhead a coordinated approach for implementing the District Statistics Plan.

6.3 Contradictory Policy and Legislation

Uganda still keeps on its law books colonial-era laws and regulations that were intended for repression. Occasionally the government conveniently enforces them to silence dissent. New laws and regulations have also been created which end up serving the same contradictory purpose. Some examples follow:

- The Public Service Standing Orders which bar civil servants from disclosing public information without (normally complicated bureaucratic) official permission
- The Official Secrets Act of 1964
- Regulation of Interception of Communications (RIC) Act, 2010, which parliament hurriedly passed in the aftermath of the July 2010 bomb attacks and allows for interception of communications and possible intrusion into personal communications
- The Anti-Terrorism Act No.14 of 2002 which gives security officers the powers to intercept the communications of a person suspected of terrorist activities but which also has a broader, undefined mandate

- The Computer Misuse Act of 2010 is intended to “ensure the safety and security of electronic transactions and information systems and other related matters”
- The Electronic Transaction Act 2011 seeks “to provide for the use, security, facilitation and regulation of electronic communications and transactions and to provide for related matters”
- The Electronic Signatures Act, 2011 aims “to make provision for and to regulate the use of electronic signatures and to provide for other related matters.”

Those ‘related matters’ are normally not defined and this flaw has been exploited to penalize innocent people who have used or shared some information or given opinions based on analysis of certain data and information²¹.

6.4 Policies on Data Access and Use

Uganda’s 2005 Access to Information Act²² was one of the first in Africa. Echoing Article 24 of the Constitution, it provided citizens the right of access to public information based on guidelines intended to facilitate fast access of data and information to citizens. However, a culture of secrecy means government rarely releases information proactively and even formal requests are routinely ignored. An online portal known as ‘AskYourGov.ug’²³ encourages citizens to file information requests based on the law but a number of them go unanswered.^{24, 25}

Uganda with support of the World Bank conducted the Open Data Readiness Assessment in 2015²⁶ and found that the policy, structural and technical infrastructure to enable open access to data is in place. Subsequently, the Ministry of ICT in 2016 developed an Open Data Policy²⁷ to operationalize the ODRA findings. The policy calls for all government data, except that which infringes on private or national security, to be open by default, in machine-readable formats. Given the challenges still existing in MDAs with producing machine-readable data²⁸ (such as analogue systems, lack of technical capacity, high costs of technology²⁹), the reality is that open data is yet to be fully embraced by the government. There has however been some progress in some MDAs:

- The Ministry of Finance now runs an open budget website where all budget data is available for free download
- A handful of districts (and most national MDAs) freely publish some documents and make some datasets available in machine readable and open formats

²¹

https://www.americanbar.org/groups/human_rights/reports/fairnessreport_uganda_stella_nyanzi/#:~:text=Radical%20rudeness%20typically%20involves%20the,she%20had%20posted%20on%20Facebook.

²² http://www.freedominfo.org/documents/uganda_ati_act_2005.pdf

²³ <https://askyourgov.ug/>

²⁴ <https://cipesa.org/2017/10/access-to-public-information-in-uganda-rhetoric-or-reality/>

²⁵ Interview with RIC-NET Uganda

²⁶ http://opendatatoolkit.worldbank.org/docs/odra/odra_uganda.pdf

²⁷ <http://www.ict.go.ug/wp-content/uploads/2018/06/Open-Data-Policy-First-Draft-vX.pdf>

²⁸ <https://medium.com/pollicy/ugandas-open-data-trek-6751fe85466>

²⁹ https://www.w3.org/egov/wiki/images/f/fd/Open_Governance_-_Uganda.pdf

- NITA-U has launched a feasibility study on all government databases to assess interoperability and open access³⁰

6.5 Regional and International Policy Frameworks

Uganda is a signatory to a host of regional and international protocols on data and development and most of its national policies on statistics draw from these documents. These include:

Other National Policies and Laws	International Legal and Policy Frameworks
Uganda Constitution, 1995	African Union Agenda 2063
Access to Information Act, 2005	UN Fundamental Principles of Official Statistics
Microdata Access Policy (UBOS)	The African Charter on Statistics
Data Protection and Privacy Act, 2019	The Strategy for the Harmonization of Statistics in Africa (SHaSA)
The Uganda Public Service Standing Orders	The East African Community (EAC) Regional Statistics Development Plan (RSDP) II
The Computer Misuse Act, 2004	The Cape Town Global Action Plan for Sustainable Development Data (2017), adopted at the First UN World Data Forum, 2017
Official Secrets Act 1964	

6.6 Summary on Policy Frameworks

APHRC should rally like-minded stakeholders to support a data advocacy programme intended to:

- Capitalize on the progress that has been made on the policy frameworks and call for a more comprehensive review of all data-related legislation with a view towards updating the old ones, and establishing new, binding ones on easier access to data, data interoperability and data protection.
- Work with local organizations to translate some important legislation into local languages to foster wide access and use at sub-national level.
- Engage the government to develop policy implementation roadmaps, with clear M&E strategies and which sanctions non-compliance in implementation.

³⁰

<https://www.nita.go.ug/sites/default/files/publications/NITA-U%20Feasibility%20study%20for%20integration%20of%20National%20databases.pdf>

- Create policy awareness and literacy by working with districts and national MDAs to 'market' these policies and their relevance to sub-national administrative levels.

6.7 Political Economy

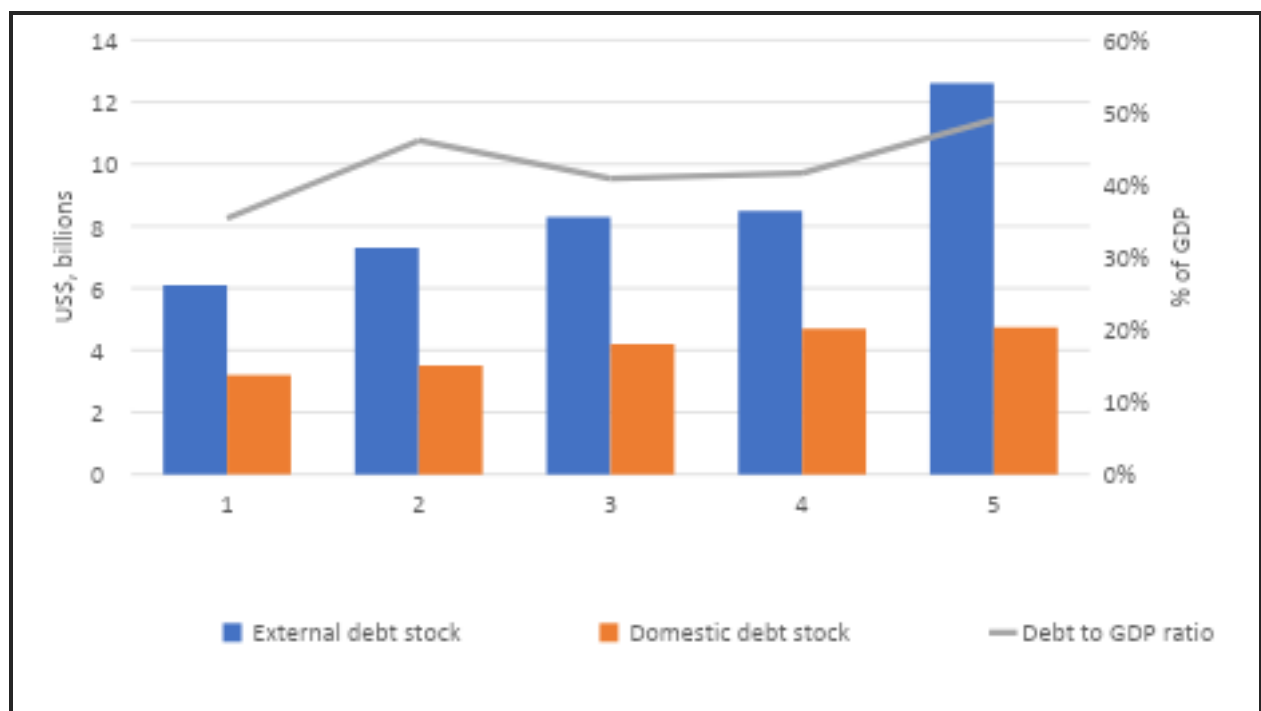
6.7.1 Economy

Uganda is categorized as a low-income country, ranked 159th by the 2020 Human Development Report, with an index score of 0.544.³¹

For 20 years from the early 1990s, Uganda enjoyed high economic growth averaging 6% per annum. This was a result of the liberalization approach adopted by the National Resistance Movement government under the aegis of the World Bank's Poverty Reduction Strategy Papers³². National poverty reduced significantly from 56% in 1993 to 19% in 2013 but ticked up slightly to 21.4% in 2017³³.

Uganda's fiscal resources are tight and donors play a crucial role in funding social services. The government has for a long time resorted to borrowing to meet its financial obligations and the debt burden has increased during the COVID-19 crisis. Interest payments take a large share of the budget allocations within a given fiscal year. Other MDA spending is mostly recurrent expenditure (salaries and wages).

Fig 3: Uganda Public Debt Composition from 2016/2017–2020/21



Source: Computations from the National Budget Framework Paper, 2020/2021

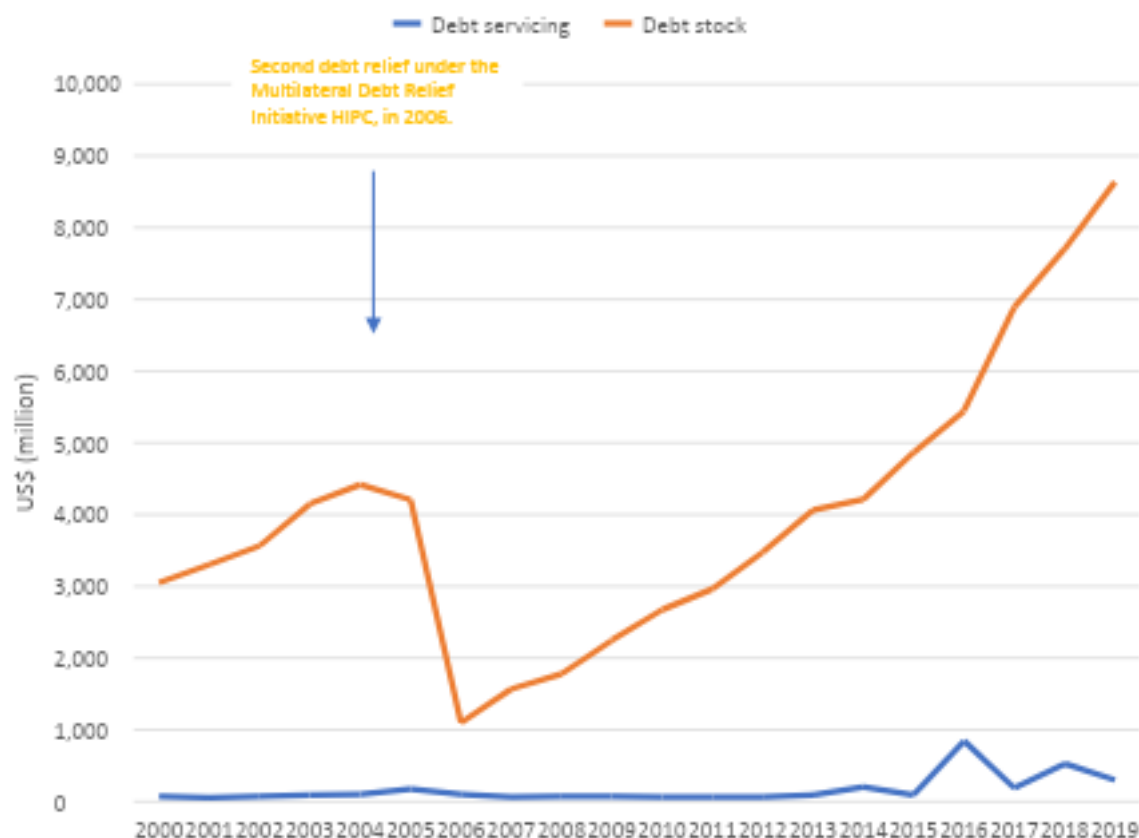
³¹ <http://hdr.undp.org/en/countries/profiles/UGA>

³² "Uganda GDP Growth Rate, 2008-2020 " <https://tradingeconomics.com/uganda/gdp-growth>

³³ <https://www.monitor.co.ug/uganda/news/national/3-4-million-more-ugandans-slip-into-poverty-1720088>

The share of the budget allocated to debt servicing through interest payments and amortization between FY2015/16 and FY2019/20 is more than double the combined total allocations to key sectors (education, health, WASH, agriculture, and social development) over the same period.

Fig 4: Uganda Debt Trend, 2000-2020



Source: Computations based on Uganda Debt Network data³⁴

Uganda's debt stock continues to rise as the government continues to rely on borrowing to cover shortfalls in revenue collection amid rising expenditures. This means that more money is being spent on managing and servicing debt than delivery of services and development of key government accountability systems such as data systems in key sectors.

The Accountability Sector³⁵, whose mission is to promote efficiency and effectiveness in mobilization and utilization of public resources using, in part data and evidence, has been suffering budget allocation reductions over time³⁶. Specialized government agencies such as the UBOS, Bank of Uganda, Ministry of Finance, Planning and Economic Development, the Auditor General, the Uganda Revenue Authority, the Inspectorate of

³⁴ <https://www.udn.or.ug/download/the-trend-of-uganda-debt-2017/>

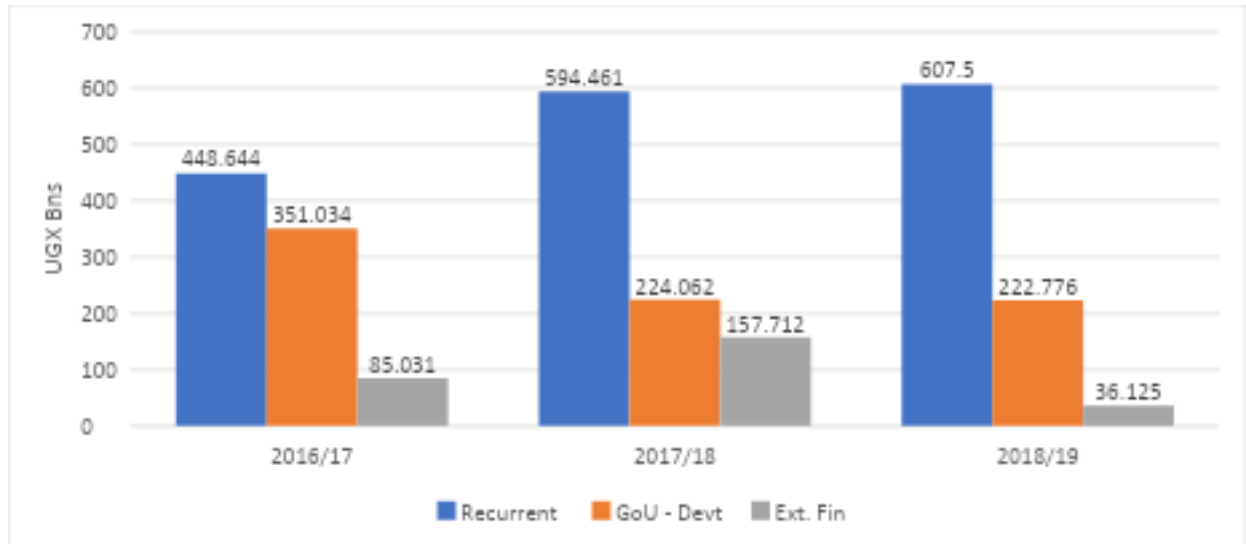
³⁵ <https://www.finance.go.ug/mofped/accountability-sector>

³⁶ Accountability Sector Annual Report FY 2018/2019

<https://www.finance.go.ug/publication/accountability-sector-annual-report-fy-2018-19>

Government, Financial Intelligence Authority, and others, are part of the Accountability Sector.

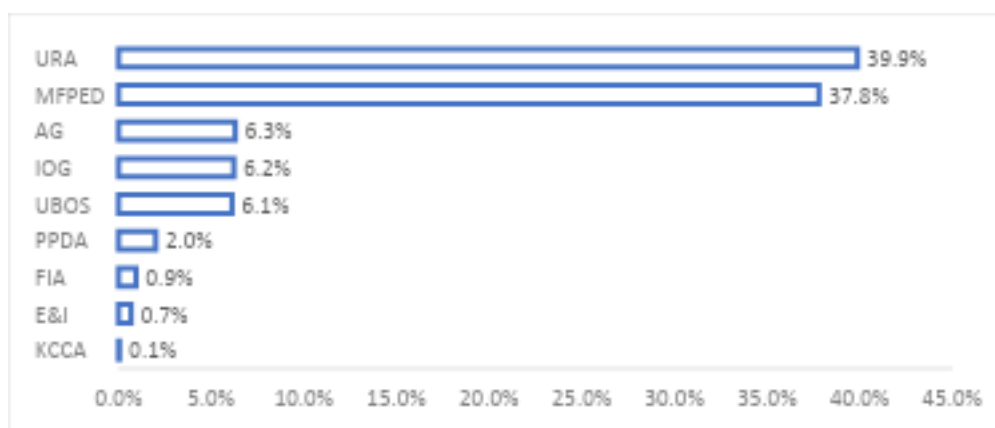
Fig 5: Accountability Sector Budget Trend



Source: National Budget Framework Paper 2018/19.

There has been a persistent decline in the development budget for the specialized agencies that are part of the Accountability Sector including UBOS. There is also a disproportionate allocation to those agencies of the Accountability Sector that are more involved in policy-making than the purely technical agencies involved in data and evidence collection such as UBOS, Auditor General's Office and Inspectorate of Government.

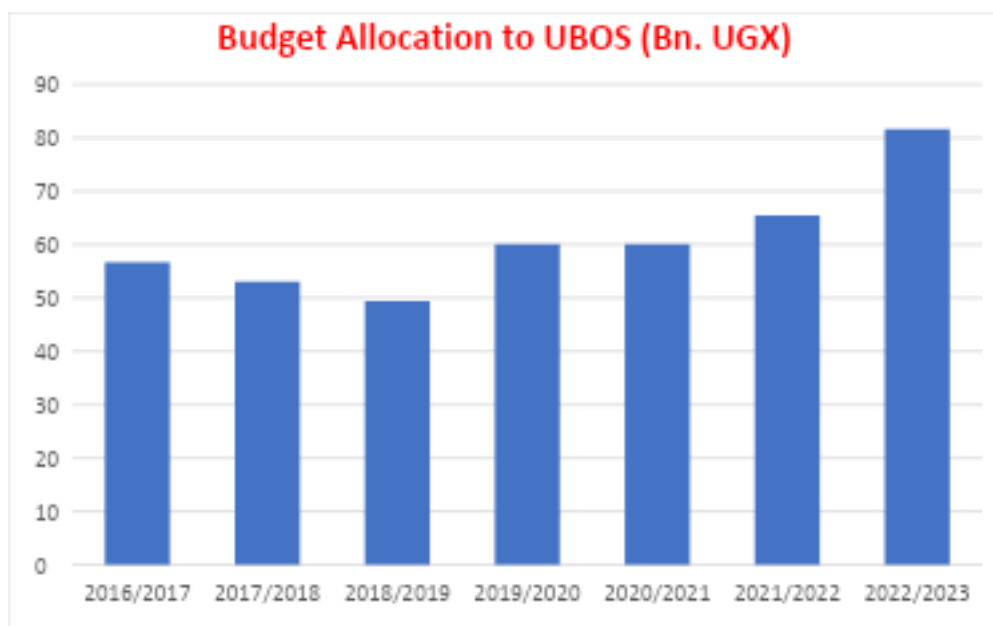
Fig 6: Percentage allocations to the MDAs under the Accountability Sector, FY 2018/19



Source: "Every Shilling Counts: The Citizen Budget" - CSBAG³⁷

³⁷ Civil Society Budget Advocacy Group <https://www.csbag.org/download/every-shilling-counts-2018/>

Budget Allocation to UBOS



Source: Author computations based on Approved Budget estimates from the Ministry of Finance

With many priorities facing the national purse, little is left for evidence gathering, monitoring and evaluation systems, and by extension data infrastructures and statistics. The overall allocation to UBOS has been stable even though development financing (non-wage funds for investment) has been reducing as per [Figure XX](#) above.

6.7.2 Governance

Uganda's current governance system is a hybrid, semi-authoritarian government that came into power in 1986 and which was preceded by eight other governments since independence from Britain in 1962. Politics permeates the whole society, in economics, law and general governance.

The National Governance structure has implications on the data ecosystem. Data demand and use, quantity and quality of production, are shaped in significant ways by sub-national units, for instance how many exist, and what resources they have to meet these data demands. Other influential factors include the legislation that governs the production, access and use of data in particular, and access to information and public expression in general.

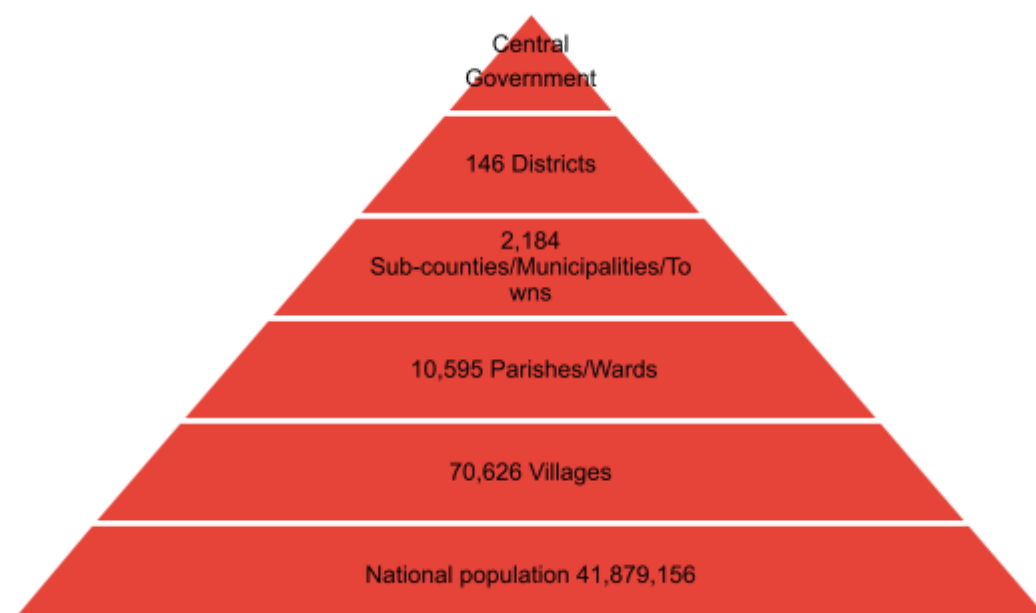
Uganda is officially a democratic republic with a governance system consisting of central and local governments. The 1995 Constitution provides for a decentralized system with local governments. Local governments (LGs) include higher level LGs which are further devolved into lower level (LGs). In urban and peri-urban areas, there are City, Municipal, Division/Town, Ward and Cell Councils. In rural settings, there is a District Council, Sub-County, Parish and Village levels.

6.7.3 Local Governance System

Uganda has been implementing a decentralized governance system that devolves powers and functions of planning, service delivery and management of basic services from the central government to local authorities. Decentralization is meant to enhance the focus on community-level priorities, empower local governments and key service delivery units to deliver efficiently and ensure that communities fully participate in decision-making processes on matters that affect their socio-economic prospects. The commitment of the Government of Uganda to this decentralization process is demonstrated by the various laws that have been enacted to support it. Most notable among these are the provisions of the 1995 Constitution of Uganda³⁸ and the Local Government Act of 1997³⁹, which aim to empower local authorities in the management of their affairs.

There are thousands of these sub-national units across Uganda, supporting a population of 41 million⁴⁰ as indicated in Figure 5.

Fig 7: Government Administrative Hierarchy



6.7.4 Data Governance at District Level

The district is the principal administrative and service delivery management center for a particular locale in Uganda. Since the attainment of independence in 1962, the number of districts has grown considerably from 16 at the time to the current 146 as of July 2020. In 2020, 15 'towns' were also elevated to 'city status' meaning that almost every region of Uganda outside the capital Kampala, has a 'city' of its own. Each increase in districts automatically cascades into an even larger increase of lower-level administrative units, i.e., sub-counties and parishes. These decisions have consequences in resource and

³⁸ <https://www.statehouse.go.ug/government/constitution>

³⁹ <https://www.ec.or.ug/docs/LOCAL%20GOVERNMENTS%20ACT.pdf>

⁴⁰ 2019/2020 National Household Survey (UBOS)

planning demands, as well as the data and information required for decision-making in these areas.

Regardless of intent (officially the multiple districts are created to ‘bring services closer to the people’ but evidence demonstrates that multiple MDAs and districts function mainly to entrench the political elite in power by distributing patronage)⁴¹, the increase in the number of districts has created both opportunities and challenges⁴² for data demand, data production, data accessibility, data use and data governance in general. Demand for data to serve these cities, districts, and sub-districts has increased, and so has the need for resources to produce, analyze, disseminate and publish these data.⁴³ The opportunities have come in the form of production of more data to meet this demand, the hiring of more technical personnel to handle data functions, and bolstering of the financial and technical capacities of these local government units to produce their data. The demand for data by multiple national and sub-national elected and technical officials to serve their constituencies demonstrates the appreciation of the value of data in decision-making, creating an impetus for support for data investment among policy and decision-makers.

6.7.5 General Administration of a District

The political wing is headed by a Chairperson of the District Local Council (sometimes simply referred to as ‘district chairperson’) who is elected and heads the district council which is made up of elected councillors representing different sub-counties in the district.⁴⁴

The technical wing is headed by a District Chief Administrative Officer (CAO) who is a technical, management bureaucrat who leads the multiple thematic departments and reports to the political leadership (see the organogram below).

Fig 8: District Structure

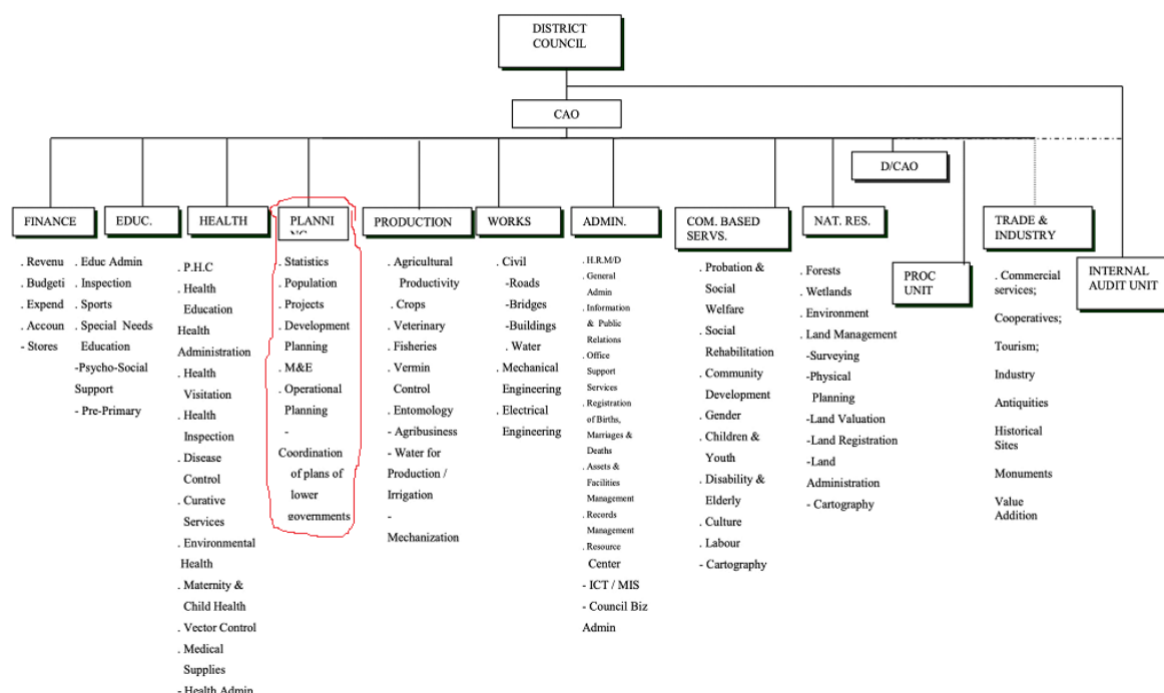
⁴¹ <https://gsdrc.org/document-library/the-political-economy-of-governance-reforms-in-uganda/>

⁴² “Chewing more than one can swallow: the creation of new districts in Uganda” D.S Singiza, 2018
<https://www.ajol.info/index.php/idd/article/view/68296>

⁴³ <https://www.monitor.co.ug/uganda/news/national/cash-strapped-new-towns-struggle-to-deliver-services-1894408>

⁴⁴ <https://core.ac.uk/download/pdf/30850581.pdf>

APPROVED DISTRICT MACRO STRUCTURE



Source: Ministry of Public Service

6.7.6 The Planning Department

The data/statistical function in a district largely lies within the Planning Department (initially a 'Unit' but now elevated) that is responsible for planning, budgeting and data collection in the district.

The department is supposed to collate and aggregate all the data from other departments to use in its planning activities. The department also synthesizes and provides analyses to the political wing (the district council) which makes plans and policy decisions for the district.

The Planning Department is staffed with a District Planner assisted by two other planners who are economists by training, and, depending on the district's hiring capacity, a district statistician.

There are multiple other departments at the district as shown on the chart above, and some, such as Health, Education, Agriculture, Human Resources and Finance have their own data specialists who manage data systems in these sectoral departments.

Different departments have different capacities in regard to data. This difference in capacity is based on several factors:⁴⁵

- The extent to which the sector, and more specifically data issues in the sector are considered a priority by the district or central government. This affects the likelihood of getting more resources to invest in data production and

⁴⁵ Interviews with District Planners, Agago, Hoima and Kyankwanzi districts; interview with directorate of district statistics, UBOS

management. The former explains why some districts have the statistician position vacant while others have it filled. It depends on the district's priorities. While the statistician position lies within the civil service structure, some districts for example, may think that hiring more teachers is more important so they use the money intended for the statistician's role to hire staff in other departments.⁴⁶

- The 'popularity' of the sector and the district among donors. For instance, health and education have some of the strongest systems because they are a priority for most donors. The US Agency for International Development (USAID) for example has health systems strengthening among its major goals and pumps a lot of money into the national and sub-national health sectors in Uganda⁴⁷ while most European Union (EU) donors prioritize education, humanitarian interventions and social protection. Some donors also tend to concentrate in particular districts and sub-regions and not others. For instance, due to 20 years of insurrection in the north, the region has received more attention from donors and NGOs than the mostly peaceful west.
- The nature of the department within the vertical administrative hierarchy of the central government. Departments such as health, education, and production⁴⁸ (agriculture) are fully devolved from their mother ministries at the national level. Their data systems and functions are a priority at the headquarters with staff recruited within a national structure. These departments tend to have more sustainable resources than those that are mostly locally instituted and funded, which have the district hiring most of the staff. Locally resourced departments include natural resources, trade and industry and administration.

Summary of Key District Sectors and their Data Dynamics (more details on these are provided in the thematic data systems section)

Department	Main data systems	Data staff status
Health	DHIS2 (HMIS)	A biostatistician collects data from all downstream health centers and enters them into DHIS2 managed at the head office of the Ministry of Health (MOH)
Education	• EMIS/Annual School Census • IIS • TMIs	School inspectors aggregate school level data and submit it to the Ministry of Education and Sports (MoES)
Social Development (Community Based Services)	OVMIS GBVMIS	Sub-county CDOs submit regular data from villages and parishes to the District CDO who wires the data to the MGLSD
Water	• UPMIS • RUWAS • Water atlas	District Water Officer collates data from Water User Committees and Sanitation officials then sends it to MoWE

⁴⁶ Interview with directorate of district statistics, UBOS.

⁴⁷ <https://ug.usembassy.gov/wp-content/uploads/sites/42/Solicitation-PMS-HSS.pdf>

⁴⁸ https://ec.europa.eu/international-partnerships/where-we-work/uganda_en

Planning Unit	Collates and aggregate data from all departments and prepares it for use by district technical and political wings	• District Planner • Planner • Senior Planner • District Statistician • Population Officer
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Relationships between the Planning Department and other District Departments⁴⁹

District departments maintain siloed data systems that are not systematically integrated. Consequently, the district planning department faces challenges in getting data from each of them for compilation of the district development plan and other uses.

- The planner emails different departments or makes phone calls asking them to submit data to her department and while many cooperate, this is a cumbersome process that leads to delays as not all departments have their data ready at the same time.
- Sometimes the planning staff have to physically visit these sectors' offices to retrieve the data physically on paper or on flash disks.
- The planner does not have automatic access to some of the data systems – for example DHIS2 – even though the health department provides the data upon request.
- Under-resourced departments do not have qualified data personnel which leads them to improvise by appointing staff to do data work consequently compromising the quality of the data the comes from such departments. This increases the workload of the planning office in cleaning up the data.
- Some departments do not have the appropriate technological tools to collect, analyze and manage the data. Some of them still use non-digital methods like papers and books to collect and share their data.

6.7.7 Link Between UBOS and the Districts

Unlike some MDAs, UBOS is not a fully devolved organization and has no district offices. However, it currently operates two zonal offices, one in Mbarara District in Western Uganda and the other one in Gulu in the North. The Department of Macroeconomic Statistics also currently has two small temporary satellite offices in Jinja and Fort Portal (two large towns in East and Western Uganda). These are mostly intended to aid the collection of price data for markets in these regions for the monthly Consumer Price Index exercise.⁵⁰

There are plans to establish UBOS offices in at least each sub-region (and some argue at district level) but several factors have led to regular postponement of these plans:

⁴⁹ Interviews with: District Planner Hoima, District Statistician, Mityana, directorate of district statistics, UBOS; review of district statistics plans for Gulu, and Mbale (all documents annexed in the document index)

⁵⁰ Interview with Directorate of district statistics, UBOS

- Limited technical and financial resources to establish and work in these offices. The budgetary allocation to the bureau, and the growing number of districts would make this an expensive undertaking while the limited availability of statisticians in the country would mean that technical manpower to run the offices would be limited.
- Limited political will from the bureau itself to decentralize as such a move would strip away some responsibilities from the center, which would translate into fewer resources and budget allocations. Currently, many sub-national data activities are supervised and implemented from the center which means regular travel to the districts by UBOS staff and consequently greater control over statistical planning and resources. Many in the UBOS head office would not willingly give up this power⁵¹.

In the absence of district offices, UBOS by default works with the planning departments to support districts in development of strong statistical capabilities. Planning departments will in turn where necessary support UBOS in their preparations for major surveys, censuses and other data collection initiatives, such as mapping enumeration areas, recruiting enumerators, and other similar activities. However, this relationship is not rooted in official structure and the planning department is not legally or structurally mandated to report to UBOS even though ‘naturally’ the two work closely together.

The bureau notes how this affects its work in its PNSD:

“...slow response by districts to submit statistical products to UBOS for review; inadequate ICT infrastructure in some districts and UBOS regional offices which are not equipped to execute UBOS mandate in local government, as well as high staff turnover and removal of the statistician position from the LG structure”⁵² inhibit UBOS work at sub-national level.”

UBOS Support to Districts

Regardless of the challenges, UBOS still plays an important role in building the capacity of districts to maintain good data systems. This support mainly comes in the form of capacity building and training, as well as collaboration on key data production initiatives.

- The bureau has a Department of District Statistics and Capacity Building whose role includes training and building the capacity of district staff in data and statistical production, analysis and use.
- Currently UBOS is running a training package which consists of seven modules developed with the Statistical Services Center of the University of Reading under funding from DFID. The bureau periodically sends trainers to conduct training of staff in charge of data in different departments of the district.
- Support to the districts in developing Annual District Statistical Abstracts. These are summaries of key indicators of the district showing progress in different thematic areas, similar to the National Statistical Abstract⁵³ developed annually by UBOS.

⁵¹ Interview with Prof. Ben Kiregyera, former UBOS ED and Board Chairman, now international statistics consultant

⁵² <https://www.ubos.org/wp-content/uploads/2019/03/UBOSExtendedSSP11.pdf> . The position of district statistician has since been reinstated in the structure following another Public Service Reform

⁵³ https://www.ubos.org/?pagename=explore-publications&p_id=74

- The bureau also has a Department of Statistical Coordination which is in charge of training districts to develop their District Strategic Plans for the development of statistics modeled along the PNSD.⁵⁴
- UBOS also supports districts in establishment of District Statistics Committees which plan for statistics within the district and are composed of data focal persons from each department. Most of these committees are however non-functional mainly due to lack of resources for facilitation of activities such as regular meetings and workplan development. District departments may also have no trained data personnel and lack the qualified staff to represent the departments on the committee.

Spotlight: District Statistics Committee

Districts are part of the National Statistical System (NSS) and each district or municipality is expected to have a statistics committee whose roles are stipulated in the Plan for National Statistical Development (PNSD) III as follows:

- To prepare Annual Statistical Abstract and Gender Statistics Knowledge products
- Ensure all statistical plans and programs are aligned to the NDP III, including those designed for relevant sectors, districts, private business and civil society
- Synchronization of statistical generation processes to ensure coherence in data within and across departments
- Ensure the functionality of the Communication Information System (CIS) at lower levels of government
- Promote a quality culture in the generation, analysis, dissemination and use of statistics
- Ensure that statistics are gender-responsive and packaged in a friendly manner as well as disseminated to relevant stakeholders and the general public
- Safeguard the effective operation of the Statistical Committee by ensuring Terms of References are adhered to
- Collaborate with UBOS in implementing the PNSD III through its Higher-Level Local Government (HLLG) SPS
- Participate in the activities of the Annual Inter-District Statistics Committee

6.7.8 Recommendations

- The two directorates in UBOS that are charged with interfacing with districts (Coordination and District Statistics) should harmonize their outreach to districts to avoid duplication of effort. For example, training modules for data production and statistical planning can be merged so that they are part of one comprehensive module. As the cost of training is high, which is why it is conducted irregularly, merging the training modules as part of the same package would reduce the costs of outreach.
- Support the non-functional District Statistical Committees with resources and capacity building.

⁵⁴ Interview with department of statistical coordination, UBOS

- Support capacity building initiatives with more resources. Currently only one or two districts a year undergo training due to lack of funding.
- There are currently no technical data experts at sub-county or parish levels. As a result, sub-county CDOs and Parish Chiefs collect and transmit data to the district. These need support and capacity building to function better.
- Expand UBOS trainings to other district-based data stakeholders including CSOs and local think-tanks and so create a critical mass of data literate intermediaries between the national and sub-national data ecosystems. This will foster and strengthen collaboration and partnerships at both levels. Involving local think-tanks and academic institutions in the program would confer more legitimacy towards representation and expansion of the sub-national data ecosystem.

7. Assessment of Sectoral Data Systems

Several information systems operate in the districts. They are spread across a variety of sectors from public administration to health and education. Most of them are mainstreamed from the national level through the mother MDAs representing these sectors. Districts simply enter or aggregate data emerging from service points at the village or parish level, from schools, health centers and water points into the systems and then relay the data to the national level.

7.1 District Data Systems in Social Sectors

Most of the data systems in key social sectors at the district level are devolved from national systems. They are run and maintained by national-level ministries, departments and agencies of the central government. However, districts hire technical staff to maintain the systems at the local level, through the District Service Commission.

- The District Health Office has a biostatistician who aggregates all DHIS2 data from health centers across the districts. The office cleans, analyzes and manages the data from health centers downstream and enters the data into the central DHIS2 system.
- The District Education department has a staff-member, typically the inspector of schools, who aggregates education data from all schools.
- The Production Department that runs the agriculture sector at the district uses its extension workers in sub-counties to collect data on farmers and relay it to the Ministry of Agriculture at the national level.
- Other sectors collect basic administrative data which they all submit to the district planning office for use in the planning process.

7.1.1 Health Management Information System

“Operationalization of a more comprehensive health information system” is listed among the seven key priorities in the *Health Sector Development Plan 2015/16 – 2019/20*⁵⁵.

“The sector needs to have clear and comprehensive strategies for data generation, validation, analysis, dissemination and use, addressing systems of routine HMIS, vital statistics (birth/death and cause of death information), disease surveillance, research, and health surveys. At present, there are still many gaps in these various systems. Coordination, therefore, should be strengthened at national and sub-national levels for routine

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http://health.go.ug/sites/default/files/Health%20Sector%20Development%20Plan%202015-16_2019-20.pdf

HMIS, disease surveillance including processes for data collection and validation and Civil Registration and Vital Statistics (CRVS).⁵⁶

The plan also calls for a special focus “on establishing a functional *Community Information System*, including vital statistics in collaboration with UBOS.” A key component of the sector development plan, the *Uganda National eHealth Strategy 2017 - 2021*⁵⁷ is an ambitious five-year plan with a proposed budget of US\$ 8.5 million⁵⁸. The bulk of the budgeted amount spent on eHealth Services, is on information sharing and data management

The eHealth Services pillar focuses on putting in place the eHealth services and tools that address the priority business needs of patient/clients, healthcare providers and healthcare managers by improving efficiency, effectiveness, communication, community education, (e.g. immunization and other outreach programmes), information and practice sharing, data management and utilization, and cutting costs of doing business.⁵⁹

The Health Sector in Uganda has the strongest information ecosystem among all sectors in the country. This is largely because the sector is the most prioritized by development partners who in partnership with the government, have been executing system-strengthening initiatives for many years. A review of data published through the International Aid Transparency Initiative reveals that 45 development agencies, from large donors to small international NGOs, are working on health interventions with a total multi-year commitment (with some projects earmarked from 2019 through 2026) of over US\$ 2 billion.⁶⁰

The health information ecosystem in Uganda is being developed around two core systems:

- The **Health Management Information System** (HMIS), built on the open-source DHIS2 platform⁶¹, tracks and aggregates actions, outcomes and logistics for all health facilities. At a local level, clinics currently submit monthly paper-based aggregated data to a district statistician who keys the data into the central system.
- A **patient-level Health Information System** that integrates an Electronic Medical Record (EMR) that contains in-patient medical notes and charts, an

⁵⁶ Ibid

⁵⁷ http://health.go.ug/sites/default/files/National%20e_Health%20Strategy_0.pdf

⁵⁸ UGX 31 billion

⁵⁹ http://health.go.ug/sites/default/files/National%20e_Health%20Strategy_0.pdf

⁶⁰ Based on the following query on d-portal.org on 14 April 2021 -

http://www.d-portal.org/ctrack.html?country=UG§or_group=122|121#view=active

⁶¹ <https://www.dhis2.org/>

Electronic Health Record (EHR) that details the care history of each person, and a Patient Health Record (PHR) that is a user-friendly version of the EHR that patients can access. This system is in the early stages of development.

*The purpose of the EMR, EHR and PHR is to provide comprehensive documentation of an individual's health information as he or she makes contact with the healthcare system. It provides information on services and treatment decisions to enable care coordination between care provider teams. The EMR, EHR and PHR are also used as key information sources for longitudinal and aggregated health information, in conjunction with other health sector data sets, to support more informed healthcare reporting and research.*⁶²

Management of the HMIS entails data collection, storage, quality assurance, data flow, processing, analysis and use. The process is hierarchical and systematically flows through the health administrative structure. Data collection and reporting are done at all levels throughout the entire health system.

At the district level, a biostatistician sitting in the District Health Office aggregates all paper HMIS forms from all lower-level health units in the district and enters the data into the DHIS2 system.

Despite the HMIS being one of Uganda's success stories, it still faces challenges. There is a reported shortage of the standard paper-based HMIS tools, inadequate technical know-how on recording and reporting using the HMIS, high staff attrition despite investments in capacity building for health workers, and excessive data/reporting requirements that take up a lot of time for the staff responsible for HMIS recording.⁶³

The Ministry of Health has instituted several measures geared towards addressing these challenges. These include health worker capacity building in data quality and use, regular HMIS training at the district level, and data cleaning and data review meetings to enhance health data use.

Users also complain that while there is a good quantity of data emanating from the HMIS, there is insufficient analysis. MOH data analysts especially at the district level tend to be economists or computer scientists, not biostatisticians, and they struggle with the task. This is compounded by a high staff turnover. Efforts are being made to address these issues, including workshops on the basic principles of health informatics and a Master's degree course at Makerere University School of Public Health which is proving to be popular.

⁶² http://health.go.ug/sites/default/files/National%20e_Health%20Strategy_0.pdf

⁶³ Interview with MoH official

7.1.2 Water and Environment

The Water and Environment Sector Development Plan (2015/16-2019/20)⁶⁴ commits responsible Directorates, Departments and Agencies (DDAs) to “monitor and inspect progress in providing data for the required corrective and decision-making actions. The data is consolidated and analyzed to generate quarterly and annual progress reports as well as in the preparation of the Government (semi-) Annual Performance Report (GAPR) reviewed by Cabinet and Parliament every year.”

Because of the cross-cutting nature of the sectoral issues handled by the Ministry of Water and Environment (MOWE), the ministry works closely with the ministries of health, agriculture, education, trade and others. For example, the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is the lead agency for water use and management for agricultural development. The mandate of the Ministry of Trade, Tourism and Industry (MTTI) covers water use and management in industries, commerce, wildlife and tourism. The mandate of the Ministry of Energy and Mineral Development (MEMD) is water use and management for hydropower generation.⁶⁵

This has implications on how data collection and management is handled. MOWE currently uses several disjointed data systems, principally its own Water Supply Database (WSDB) (from which data for the Water Supply Atlas is generated)⁶⁶ which holds data on water points, water sources per village, access to safe water, water functionality, distribution, and water user committees (WUCs). Data is collected on paper by extension workers⁶⁷, sent to the district, amalgamated at the ministry’s regional technical support units⁶⁸, and then sent to MOWE where it is entered into the system. While data is captured daily, most of the databases are only updated quarterly.

Other water data comes from multiple databases with inevitable consequences for coordination and interoperability. These include the Rural Water and Sanitation database (RUWAS)⁶⁹; Utility Performance Monitoring and Information System (UPMIS)⁷⁰; Rural Household Sanitation database (under development); and various other administrative data sources.⁷¹

At the district level, the District Water Office is the aggregator of most of this data from the water sources in villages. After cleaning, it sends the data to the national level.

Figure 9 - Overlapping WASH information systems.

⁶⁴

<http://npa.ug/wp-content/uploads/2018/01/Water-and-Environment-Sector-Development-Plan-2020-new.pdf>

⁶⁵ Meetings with MOWE official.

⁶⁶ <http://wateruganda.com/>

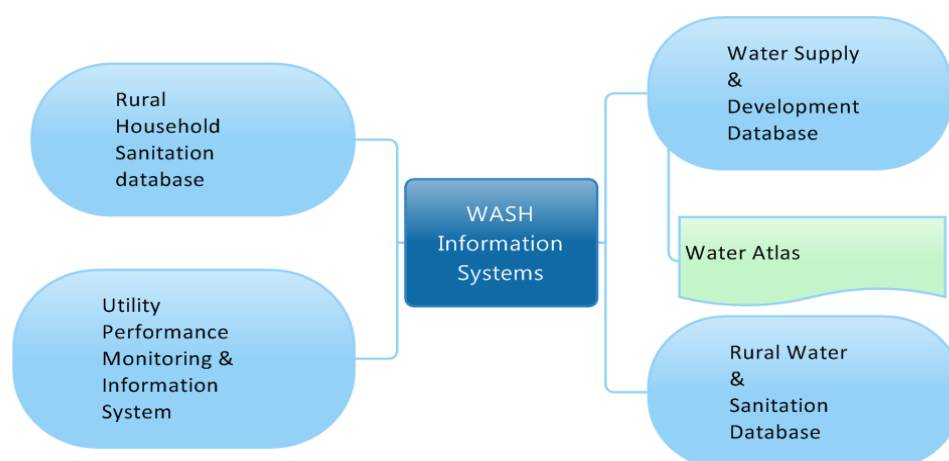
⁶⁷ Extension workers are community level officials, mostly volunteers who perform cross-sectoral functions on behalf of the different sectors including health, education, Agriculture, etc. These might include Agricultural extension workers, Community based health workers or Village health teams, and even members of local NGOs.

⁶⁸ The TSU is a regional office of the Directorate of Water Development under the MWE which oversees technical aspects of water supply in a collection of districts in a particular region.

⁶⁹ <http://wsdb.mwe.go.ug/>

⁷⁰ <http://upmis.geocodis.com/>

⁷¹ Public sanitation, water quality, water management resources compliance, ground water, wetlands, forests, climate change and water for production.



Some WASH data challenges are also similar to those in other sectors:⁷² poor quality data, infrequent data which is captured on paper; inaccurate coverage estimates and barely functioning WUCs. In addition, while databases are publicly accessible, there are frequent system faults that take them offline, and there is no common platform for regular data sharing other than an annual report generated out of the databases.

An open data portal⁷³ run by the Ministry of Water publishes routine district-level WASH data to improve uptake and use of its data.

7.1.3 Education

The *Education and Sports Sector Strategic Plan 2017/18 – 2019/20*⁷⁴ points out “key strategic priorities and bottlenecks that must be overcome such as inadequate school inspection which creates room for ghost pupils, teachers and even ghost schools and/or absenteeism of both teachers and learners”⁷⁵. While recognizing, in passing, the importance of promoting “e-learning and computer literacy in Secondary and Tertiary Education” and the “need for an ICT Policy for the Sector” it pays little attention to data investments in comparison with the health sector. It does commit to strengthening the Education Management Information System but without any details of what this might entail.

“Strengthen the Education Management and Information System (EMIS) to collect and process more accurate and timely data for use by decision-makers. EMIS should be linked to

⁷² Meeting with MWE official.

⁷³ <http://wsdb.mwe.go.ug/index.php/reports/national>

⁷⁴

<http://www.education.go.ug/files/downloads/EDUCATION%20AND%20SPORTS%20SECTOR%20STRATEGIC%20PLAN.pdf>

⁷⁵ Ibid

NIRA (by giving pupils/students a national identification number) and the Inspection Information System”⁷⁶

The ministry also elaborates on the importance it attaches to data in its other policy documents, such as the Education Factbook:

“The MoES being the overall coordinator, formulator, and implementer of education policies attaches a big importance to the availability of accurate, timely, and reliable information for informed decision-making, planning, monitoring, and evaluation of progress according to set goals and objectives.”

The **Education Management Information System (EMIS)** was, until recently, the major system for the collection, integration, processing, maintenance and dissemination of education data and information by Uganda’s Ministry of Education.⁷⁷ Due to underfunding and substantial shortcomings⁷⁸, however, its focus has narrowed to an annual **School Census**.⁷⁹

While the census covers a wide range of indicators, the lack of timely data (not only is it annual but the most recent data that is publicly available is for 2016⁸⁰) provides little help to the MOES in its month-by-month management of schools. Furthermore, the introduction to the 2016 Census lists the following challenges: the lack of cooperation from private schools; poor record-keeping by education institutions; low response rates; misreporting of the age disaggregated pupils/students’ information; and lack of commitment from some local government officials and headteachers due to personal issues (like other personal commitments, low facilitation and socio-economic factors).⁸¹

Other education data comes from UBOS surveys, the National Assessments on Progress in Schools in Education (NAPE)⁸² and the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ).

Other Systems in the Education Sector include:

The Integrated Inspection System (IIS) allows school assessors (inspectors) to collect school data using computer tablets and upload it onto the IIS. The system automatically analyzes the data and generates school reports to enhance real-time and consistent

⁷⁶

<http://www.education.go.ug/files/downloads/EDUCATION%20AND%20SPORTS%20SECTOR%20STRATEGIC%20PLAN.pdf>

⁷⁷

<https://www.aurecongroup.com/projects/government/uganda-education-management-information-system-sustainability>

⁷⁸ Interview with Ministry of Education official

⁷⁹ <http://education.go.ug/data/smenu/2/EMIS%20Statistics.html>

⁸⁰ <http://education.go.ug/files/downloads/The%20Education%20Statistical%20Abstract%202016.pdf>

⁸¹ Ibid

⁸² <http://nada.uis.unesco.org/nada/en/index.php/catalogue/103>

reporting. Initially piloted in 46 districts across different regions of the country⁸³, the system was put in place to curtail problems of manual inspections which were bedevilled by problems including delayed reporting of inspection findings; inconsistent foci and poor analysis of inspection findings; transport problems; excessive paperwork; and the inability of the data to be cross-checked with the EMIS/census data.

7.1.4 Justice Law and Order Sector and Social Development

The Justice Law and Order Sector (JLOS) is a sector-wide approach that brings together 18 institutions⁸⁴ responsible for administering justice, maintaining law and order and promoting the observance of human rights. Through a sector-wide approach, the sector brings together state and non-state actors who play complementary roles in planning, budgeting, program implementation and monitoring and evaluation. Most of the 18 participating institutions maintain substantial information systems of their own. The importance of the sectoral approach is to establish common standards across these systems.

The *JLOS 4th Strategic Development Plan (SDP IV) 2017-2020*⁸⁵ is the current guiding document and focuses on the integration of services across departments, particularly at the district level. This integration includes the alignment of data collection efforts, driven through the development of a monitoring and evaluation system.

“The Sector M&E system will draw on several information sources. These include: existing data gathered and included in the Sector and Institutional databases under JLOS SIP III⁸⁶; specially designed qualitative and quantitative user surveys; extended data gathering related to specific JLOS SIP Outputs; existing national surveys carried out by UBOS in collaboration with other government and non-government institutions/sectors that gather data directly relevant to this M&E system.

Where possible JLOS will seek the collaboration of UBOS, Office of the Prime Minister, Inspectorate of Government and other relevant bodies to add to the existing survey data instruments and data collection procedures to meet the Sector M&E needs. This approach is aimed at creating synergy between various related data gathering and survey efforts.”⁸⁷

⁸³

<https://www.globalpartnership.org/news-and-media/news/uganda-introduces-electronic-inspection-system>

⁸⁴ <http://www.jlos.go.ug/index.php/about-jlos/member-institutions>

⁸⁵ https://drive.google.com/file/d/1qUN29_ZPC-tXM888SCJ9PQbHQVksDqBO/view

⁸⁶ The JLOS sector development report 2018.

⁸⁷ https://drive.google.com/file/d/1qUN29_ZPC-tXM888SCJ9PQbHQVksDqBO/view

Each of the JLOS institutions maintains its own, separate information systems.⁸⁸ These include the Police Crime Records Management System⁸⁹; Prosecution Case Management Information System (PROCAMIS)⁹⁰; Prisoner Management Information System⁹¹; and an **Integrated Case Management**

7.1.5 Social Development Databases

The Social Development Sector falls within the docket of the Ministry of Gender, Labour and Social Development. The sector is charged with the development and implementation of the Social Development Investment Plan (SDIP) with the mandate to empower communities to harness their potential through cultural growth, skills development and labour productivity for sustainable and gender-responsive development. The sector promotes issues of social protection, gender equality, equity, human rights, culture, decent work conditions and empowerment for different groups such as women, children, the unemployed youth, internally displaced persons, older persons and persons with disabilities.

One of the objectives of the Social Development Sector Plan (SDSP)⁹² 2015/16-2019/20 is to “strengthen coordination and M&E, by developing a comprehensive M&E Plan to track progress along with the key performance indicators and results against planned targets.” The plan further states that “monitoring and evaluation will be achieved through staff capacity building in M&E, creation of functional statistics, monitoring and evaluation systems to capture achievements of SDSP interventions and improving coordination mechanism among SDS actors.”

The SDSP aims to create an integrated “web-enabled Management Information System (SDS–MIS) to generate, manage and store data and statistics for the sector”⁹³. The plan acknowledges the problem of having multiple systems in stating that:

“Existing MIS sub-systems (Orphans and other Vulnerable Children MIS, National Adult Literacy MIS, Gender-Based Violence MIS, Labour Market MIS, Occupation Safety and Health MIS, Social Assistance Grants for Empowerment MIS, Youth Livelihood Programme MIS, Uganda Women Entrepreneurship Programme MIS, Community Based Rehabilitation MIS, Community Information System, and Child

⁸⁸ Interview with JLOS secretariat M&E team

⁸⁹ <https://www.upf.go.ug/police-develops-crime-records-management-system/>

⁹⁰

www.dpp.go.ug/index.php/component/k2/item/22-the-launching-of-the-office-of-the-dpp-computerised-prosecution-case-management-system-procamis

⁹¹

https://www.newvision.co.ug/digital_assets/2bbba2a8-a78a-410b-b1e1-1359adcdb2d4/38-Uganda-Prisons.pdf

⁹² <http://www.mglsd.go.ug/Plans/SOCIAL%20DEVELOPMENT%20SECTOR%20PLAN.pdf>

⁹³ Ibid

Help Line MIS) shall be strengthened and harmonised to feed into one, comprehensive sector MIS.”

The Ministry’s 2018 “Issues Paper on Strengthening the Production, Development and Dissemination of Statistics” states that the Social Development Sector needs an efficient statistical system to effectively handle sectoral data that will meet the demands of the various stakeholders.

The same paper however notes several problems in the sector’s data ecosystem, including: the low profile of statistics (i.e. the role and importance of statistics is yet to be fully appreciated) in the Social Development Sector (SDS) where some decision-makers, and administrators, do not appreciate the role of statistics in promoting good governance and management of public affairs; limited statistical advocacy due to lack of financial resources; poor coordination and information sharing between data users and producers; limited skills for data production and entry (for example data on gender based violence collected from the Districts is entered by CSOs who are not trained and supervised by the ministry); untimely data; data gaps on numerous variables such as gender, employment, unemployment (by sex and gender), rights, community empowerment, orphans and other vulnerable children, ethnic minorities, youth, women, elderly and disabled persons (by sex), other people in difficult circumstances, occupational safety and health, and cultural statistical variables among others.

At the district level, the District Community Development Officer (DCDO), is in charge of all social data in the district. CDOs are deployed in sub-counties to correct routine data using standardized paper tools.

8. Institutional Capacity

8.1 Human Resource Capacity for Data at the District Level

There is continuous turnover of staff in Ugandan districts due to poor pay and the sometime harsh working conditions, especially in rural, hard-to-reach districts. Despite the central's government's addition of a 'hardship allowance' to the salaries of district personnel, many districts struggle to recruit staff, especially for highly technical and specialized areas like data and statistics. While levels of unemployment are high in general, graduates of data, statistics and other science and mathematical areas tend to be in high demand within the private sector and NGOs where they are offered better pay.

The starting salary for a district statistician for example, according to the civil service salary scale is U4, which translates into a gross salary of 721,000 Uganda Shillings per month⁹⁴, (about \$200).

The specifications for this position include⁹⁵:

- An Honours Bachelor Degree in Statistics or Applied Economics from a recognised institution
- Data gathering skills
- Analytical and communication skills
- Data processing skills

While the duties include:

- Collecting, analyzing and storing data
- Producing statistical reports
- Appraising development projects
- Organizing and implementing national surveys
- Providing technical support on statistical matters to local government

When districts fail to find people with the relevant technical qualifications in data and statistics, they tend to downgrade academic requirements and end up hiring economists, or social scientists. This affects the quality, quantity and other attributes of data across the whole data value chain in the district.

As a result, some districts have vacant district statistician positions. Others have deployed economists or provided intensive training to their existing staff in general data collection and management.

⁹⁴

<https://www.publicservice.go.ug/media/resources/Salary%20Structure%20FY%20201819%20Schedule%201%20-%202012.pdf>

⁹⁵ <https://theugandanjobline.com/2012/05/statistician-namayumba-tc-wakiso.html>

Even more urgent, is the position of District IT officer. Very few districts have filled this crucial position. Those that do have the IT officer have better online visibility, websites and data sharing and use practices. The Ministry of ICT had planned to roll out countrywide recruitment of IT officers but due to lack of resources, only a handful of districts which can afford to pay the officers with local resources have hired them. Most districts maintain information officers, who are not as technically competent in ICT issues as IT officers are.

NITA-U has been conducting training in web administration and management for districts but most districts still have no websites. Those that do have them suffer from poor administration. The training targets technical officers in charge of websites (IT and Information Officers).

Challenges of Statistics Management in a typical District: Gulu case study

Challenges	Constraints
• Inadequate human resource development	• Inadequate human resources to handle data workload • Inadequate/lack of human resource skills in data management • Fixed staff structure which limits data management in departments • High staff turnover resulting in vacant posts • Limited resources for capacity development on data management • Delayed updates on new policies and guidelines, line ministry tools e.g., HMIS and OBT • Lack of staff recruitment in ICT
• Inadequate logistical supplies	• Lack of standard data collection tools in all departments • Inadequate transport for data collection and supervision • Inadequate storage facilities such as shelves, filing cabinets, box files, calculators • Lack of equipment like GPS, plotters, water testing machines
• Inadequate infrastructure development	• Inadequate ICT equipment including computers, printers, photocopiers especially at lower levels of government • Inadequate power supplies e.g., solar panels, inverters, back-up generators • Inadequate office space for data management in all departments

	• Lack of internet services in some departments/sections for easy reporting and information sharing • No linkage between the department data software (MIS) and the Planning Unit which supervision or monitoring difficult • The absence of a one-stop support center for statistics
• Weak coordination mechanisms	• Limited support supervision on data management • Inadequate data validation • irregular review meetings at all levels • Some areas are inaccessible or hard-to-reach for data collection • Limited appreciation of statistics among key stakeholders • Absence of key information and statistics in certain departments and sections e.g., sports data • Limited financial support for data management by both government and donors • Reporting schedules not provided by line ministries, departments and agencies • No recommended reporting tools and guidelines on data management by MDAs in most district departments

Source: Adapted from Gulu District's Statistics Strategic Plan, 2013 (available in document index annexed)

8.2 Technical Capacity: ICT and Infrastructure Access

Coverage of ICT and physical infrastructure, especially in the rural countryside, is a good proxy for the ability of sub-national administrative units to maintain sustainable data systems. A school or health center needs to be connected to electricity, have internet connectivity and computers to even consider trialling digital data capture at the service point. Local government officers need similar infrastructure to use and disseminate data easily. Without this infrastructure, the data ecosystem is seriously impaired.

8.2.1 Electricity Coverage

Overall, about 43% of Uganda's population has access to electricity according to the World Bank⁹⁶. For rural dwellers, however, only about 39% have access. Although grid extension on its own does not equate to individual or household access, general

⁹⁶ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=UG>

connection means public service distribution is easier. For rural schools and health centers without enough resources, cheaper options such as off-grid solar systems should be explored.

Uganda's Rural Electrification Agency (REA)⁹⁷ has connected most district administration and sub-counties across the country to the electric grid. However, due to the regular increase in the number of districts, some of them, especially the newer ones are not yet connected. Using the Electricity Connection Law, the government continues to subsidize connection for rural dwellers⁹⁸. A GIS-based IMS⁹⁹ helps users track rural electrification coverage to the village and household level. EDIMS is a web and mobile application that enables users to view, validate, store and analyze consumer and connection information for every household alongside other relevant information. It also helps in analyzing the connections and power consumption of different service providers and gives access to consumer/connection data and various report generation mechanisms to help the government of Uganda track the overall status of electrification and make relevant decisions.

8.2.2 Internet Coverage

Internet usage in Uganda remains low at 24% nationally (World Bank, 2017), while fixed broadband subscriptions are a little over 92,000. There are 18.5 million internet users as of June 2018, 10 million of these are mobile subscriptions.¹⁰⁰ Several districts are not yet connected. The government, through its National IT Authority, is however fast-tracking the establishment of enabling infrastructure.

The National Data Transmission Backbone Infrastructure and e-Government Infrastructure (NBI/EGI) Project

Adoption of new technologies across the national and sub-national statistical system is a slow process. Few offices have adequate IT equipment and connectivity. Most sub-national statistics units still work with very slow internet speeds, old computers and erratic power supplies. The technical capacity of staff is often inadequate, a challenge which is common across all sectors. National offices do have basic IT facilities and the necessary software, and statistical units in MDAs and most district and sub-county offices still lack basic IT tools¹⁰¹ even though this is where most of the administrative data comes from. The National IT Authority's (NITA) project, the national data transmission backbone and e-government infrastructure,¹⁰² aims to improve internet performance throughout Uganda. NITA is also introducing district centers¹⁰³ to narrow the digital divide in rural areas and improve access to online information. The NBI/EGI project¹⁰⁴ started in 2007

⁹⁷ <https://www.rea.or.ug/>

⁹⁸ <http://rea.or.ug/wp-content/uploads/2019/12/Electricity-Connections-Policy.pdf>

⁹⁹ <http://edims.rea.or.ug/>

¹⁰⁰

<https://www.ucc.co.ug/wp-content/uploads/2017/09/Communication-Sector-Performance-for-the-Quarter-ending-June-2018.pdf>

¹⁰¹ UBOS, interview

¹⁰² www.nita.go.ug/projects/national-backbone-infrastructure-project-nbiegi

¹⁰³ www.nita.go.ug/projects/dbics

¹⁰⁴ <https://www.nita.go.ug/projects/national-backbone-infrastructure-project-nbiegi>

and was expected to end in 2011, but it is still going on in a phased manner due to funding and other challenges.

The project aims to connect ministries and government departments to the e-Government Network. This will enable efficient government operations by simplifying procedures, introducing transparency and accountability and also making timely information available to citizens. The objectives of the project are to:

- Establish a National Backbone Infrastructure (NBI) with high bandwidth data connection in major towns of Uganda
- Connect all government ministries, departments and agencies (MDAs) in a single wide area network, establish a government data center, and establish district information centers

The expected outputs after the project are:

- Connection of all government ministries
- Implementation of e-Government
- Setting up of a fibre-optic backbone transmission cable (2,294km) across the country
- Establishment of district information centers to improve communication
- Improved service delivery by government ministries, and
- Reduced cost of communications.

Since its rollout, thousands of kilometres of fibre-optic cable have been laid and many MDAs, districts and service delivery points such as schools and hospitals, border points and revenue offices have been connected to the internet and other services. However, a 2019 report by the Auditor General, indicates that although they are connected to the backbone, many beneficiaries are not effectively utilizing the facilities available to them, which compels the government to continue spending huge sums of money on other alternative services.¹⁰⁵ The report reveals that out of a total of 445 sites connected to the national backbone infrastructure, 76 are not utilizing the available services at all. This is due to several factors including resistance to using technology as it reduces opportunities for malpractice, the lack of enabling equipment, among other reasons.

Total areas connected to NBI

Item	Number of Sites/Links
Sites connected	1348
Sites connected and using the service	806
Sites using the internet	480
Leased lines -IFMIS	104
Leased Lines	315
Dark Fibre	4

¹⁰⁵ <https://observer.ug/news/headlines/63515-gov-t-losing-billions-in-under-utilised-internet-auditor-general>

Source: NITA-U “NBI connection Status April 2021” report, available in the document library.

Fig 10: Map showing fibre-optic coverage of the NBI



Source: NITA-U, 2019.¹⁰⁶ Notes: Coverage of the NBI as by December 2017. Green is completed, blue is to be implemented in FY 2018/19, maroon is under funding review.

9. Data Use in Uganda

There is a poor culture of data use in Uganda at both national and sub-national levels. Some data producers expressed frustration that they create data which does not get used by policymakers. The PNSD found “limited appreciation of statistics and its role in economic and social development especially in HLGs [Higher Local Government] and the general public” to be one of its challenges. Other causes of poor data use identified by the PNSD include: failure to recruit enough statisticians; limited statistical awareness; a “persistent phobia for numbers by MDAs and the general public”; and undue bureaucratic restrictions in accessing data (especially raw- or micro-data).

There are other inhibitions to data use, however, beyond cultural ones. While numerous laws, government policies and guidelines provide individuals with the right to privacy¹⁰⁷, they also give citizens the right of access to information, resulting in potential ambiguity between what is private and what is public. For this reason, most microdata is currently inaccessible to the public, although most datasets are published in summary form.

When seeking data, one still has to go through complicated bureaucratic processes:

- At the district level, non-district staff seeking data must write to the Chief Administrative Officer per the Access to Information Act and wait 21 days for a response.
- Data sharing and dissemination is still largely analogue, with big books and reports printed to share information. A lot of data is collected and kept in paper formats.
- Most districts have websites but they are rarely updated and some even have incorrect and missing data and information.

The PNSD III states that “data have no value except when they are processed, analyzed, interpreted and put in the public domain for use by all manner of data users.” **The plan aims to increase data uptake and use through effective data dissemination.”**

9.1 Data Use at the District Level

Most districts use data for planning and budgeting. The Local Government Planning Guidelines¹⁰⁸ direct district authorities to use data at every level of the planning cycle. Planning starts at the village level to the national level (bottom-up planning). Lower-level administrative units at village and parish levels identify their key development priorities in a participatory manner and subsequently send these up to the administrative hierarchy to form the sub-county development plan, which informs the DDP which in turn informs the NDP.

The National Planning Guidelines mandate districts to make sure data is available and used at each stage of the planning process.

¹⁰⁷ Article 27: Right to privacy of person, home and other property

¹⁰⁸ <http://npa.go.ug/wp-content/uploads/LG-PLANNING-GUIDELINES.pdf>

“The process of identifying, analyzing and ranking the broad development issues, potentials, opportunities, constraints and challenges of a LG will be initiated as a desk-based analysis using the different data and statistics given by the different situation analyses and consultations.”

However, data alone does not determine planning and resource allocations. Politics and national priorities often trump local aspirations. The Ministry of Finance for example, communicates ‘Indicative Planning Figures’ which are a range of amounts that local governments must keep their budgets within to qualify for central government grants.¹⁰⁹

¹¹⁰

9.2 Best Practices in Data Collection and Use

Uganda’s data ecosystem faces several challenges. There are also several attempts to address some of the challenges around data compartmentalization, limited data use and partnership building. They include the following:

9.2.1 Community Information System

Community data collection in Uganda is fragmented. For example, **VHTs** currently collect health data; community development officers collect social development data; parish chiefs and local committees collect information on informal justice, infrastructure and community relations; and extension workers collect agricultural data.

In 2005, as part of the Poverty Eradication Action Plan¹¹¹, UBOS piloted a Community Information System (CIS) which by 2014 covered half of the country’s districts and is now in 47 of them. The main objective of the CIS was:

“... to empower communities to make informed decisions using readily available and up-to-date information. The system was also intended to enable community administrators to have regular and meaningful information about households and communities on which to base development planning, monitoring and evaluation of projects/programmes that are geared towards poverty alleviation. The specific objectives are:

- *To facilitate regular and sustainable monitoring of the*

¹⁰⁹ <http://www.rhu.or.ug/wp-content/uploads/2018/06/A-guide-to-Engaging-Local-Budget-Process-1.pdf>

¹¹⁰ https://www.britishcouncil.ug/sites/default/files/budget_monitoring_tool.pdf

¹¹¹ Poverty Eradication Action Plan 2004/5 – 2007/8, MOFPED - https://www.unpei.org/sites/default/files/e_library_documents/UG-PEAP2005-2008.pdf

effectiveness of government, NGOs and other agency poverty reduction initiatives among communities and for policy and decision-making.

- *To enhance the use of reliable and accurate data among communities.*
 - *To support participatory development planning at various levels of administration.*
 - *To identify communities and households by their socio-economic characteristics and hence their needs.”¹¹²*
-

The CIS was established to ensure that households and communities have access to their information and make use of it at that level. It involves communities in collecting, compiling, analyzing data and using the resulting information (shared horizontally and vertically) for informed decisions. Horizontal information sharing occurs within the community and vertical information sharing is to higher levels (parish, sub-county, district and sub-region). Under the PNSD III implementation, the CIS is now invigorated across the country in all HLGs (districts), meaning that each HLG must embed it in their Strategic Plans for Statistics. The CIS is intended to:

- Complement qualitative information collected annually by the Ministry of Local Government (MoLG) through the Harmonized Participatory Planning Process
- Support updating of household sampling frames for all villages in the sub-county for any survey undertaking
- Provide readily available, up-to-date data for planning, monitoring and evaluation of development programs at Lower-level Local Governments.

The CIS district roll-out was progressing well until its funding was diverted for the 2014 Census¹¹³. Despite a post-census program reinvigoration during which a move from paper to tablet-based data capture was trialled, the program has on several occasions come close to being abandoned due to lack of funding.

The CIS can produce an annual census, delivering accurate data to local government and is far more cost-effective than 10-yearly censuses and the 3-5 yearly household surveys. The PNSD III is now re-emphasizing the role of CIS and is fully embedding it into national and sub-national statistical plans.

9.2.2 Current Data Interoperability Efforts

The problem with Uganda's data ecosystem, in general, is not so much about lack of data as there is a lot of good quality development data in Uganda and the Uganda Bureau of Statistics is considered one of the best NSOs in Africa, producing regular surveys and censuses. Most MDAs produce good administrative data as well.

The major problem is that much of this data is scattered in dozens of small databases and information systems and is therefore not always publicly available in a one-stop

¹¹² <http://www.ubos.org/onlinefiles/uploads/ubos/Amolatar.pdf>

¹¹³ Interview with UBOS official responsible for district statistics

center in easy-to-use formats. Most of the information systems are not interoperable and do not speak to each other.

Major data producers in Uganda including the Uganda Bureau of Statistics use different concepts and methodologies for data collection¹¹⁴. Additionally, they rarely foster cross-agency sharing of the data.

There are already efforts to link several disparate datasets in the country:

1. UBOS and the UN Population Fund (UNFPA) are linking and harmonizing administrative data and information systems on Gender-Based Violence databases (VAWG/HP and SRHR) into a GBV dashboard¹¹⁵.
2. UBOS is hosting an SDG dashboard to bring together all SDG data
3. UBOS is also hosting the Information Platform for Nutrition (NIPN) to harmonize all nutrition data
4. UNICEF, in conjunction with EPRC and the Ministry of Finance, host the Equity Atlas Database that visualizes all spending data on one platform.
5. Development Initiatives' 'Spotlight on Uganda' seeks to create a one stop center for sub-national data in Uganda.
6. UBOS, with support from UN WOMEN, hosts a gender statistics portal to bring together all data on gender.

9.2.3 Building District Websites

In 2012, a social accountability project funded by the EU through **HIVOS** and a local think-tank known as Rwenzori Information Centers Network supported districts by establishing web portals¹¹⁶ for them to share data and information. The fund would initially hire resource IT and web professionals to work with district staff who would eventually run the platforms themselves. Districts were also given e-society resource centers where data users would go and access data, free internet and other IT products. **Twenty-five** districts signed up for this initiative but only a handful maintained it after the end of the project. District governments were supposed to absorb the trained staff into the civil service as IT officers and data officers but this did not happen to the extent that it was supposed to. Those districts that did absorb the trained staff, have the highest online visibility to date and have improved data and information sharing as well as their data use culture.

¹¹⁴ <https://catalog.ihnsn.org/index.php/citations/22460>

¹¹⁵

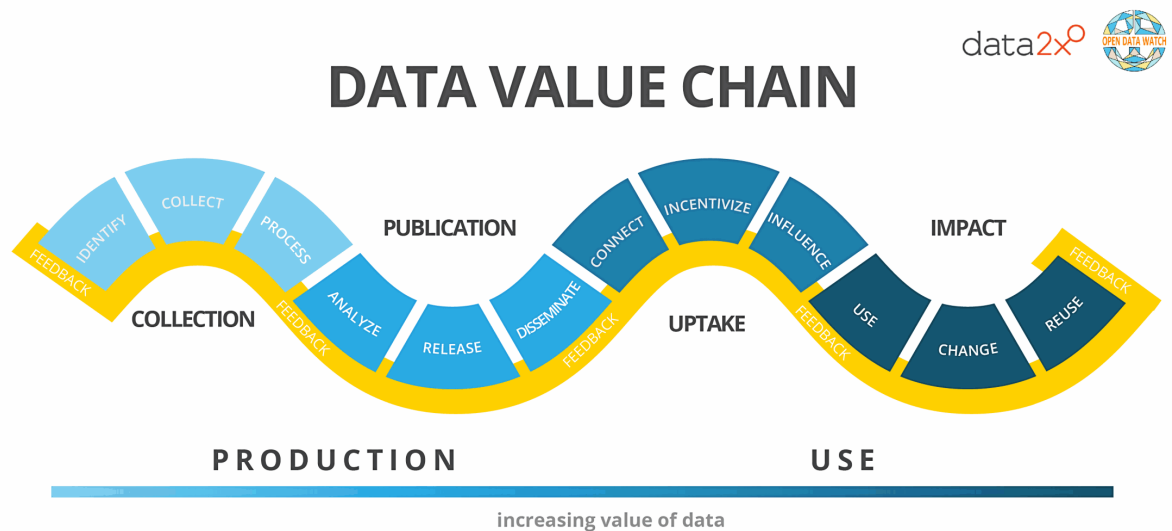
https://public.tableau.com/profile/uganda.bureau.of.statistics#!/vizhome/GenderBasedViolenceinUganda-2018-19-data/GBVCasesreportedbyMOH_UGPolice?publish=yes

¹¹⁶ <http://ric-netnews.blogspot.com/2012/10/>

10. Conclusion and Recommendations

Uganda's data value chain faces distinct challenges which can be categorized by each stage of the chain.

Fig 11: Data Value Chain Model, by Open Data Watch¹¹⁷



Data Production

Uganda's robust policy and legal framework is hampered by:

- Multiple data and information systems which creates silos
- Limited use of technology
- Limited human resources especially at the sub-national level
- Few financial resources for quality, timely and consistent data production
- Resistance to the adoption of technology

Data Use

- Poor culture of data use in general
- A political economy rooted in political, not evidence-based policymaking
- Poor quality data
- Difficulty in accessing data
- Limited coordination among data producers and users
- Few resources to synthesize the data and make it useful
- Inadequate technical capacity to analyze data

¹¹⁷ <https://opendatawatch.com/reference/the-data-value-chain-executive-summary/>

- Data illiteracy across the ecosystem
- Poor feedback to data producers

10.1 Addressing the Major Challenges

Quality and timely data are vital to enable governments, international organizations, civil society, the private sector and the general public to make informed decisions and ensure the accountability of representative bodies. The National Statistical Systems (NSS) face the urgent need to adapt and develop to meet the widening, increasing and evolving needs of data users. The following interventions may go a long way in addressing some of these challenges

Policy Makers

1. Data Silos

The major challenge with data especially at the district level in Uganda is that despite several efforts by a variety of stakeholders to ensure easy access to data and information, district level data is still not easy to access. Information is scattered in different departments, sectors and ministries and not made interoperable on a one-stop center for access by users. Data is still published in analogue formats, there is little interagency coordination, and staff turnover quickly leads to loss of critical institutional memory.

Policy makers should consider taking the following steps towards full system integration:

- **Creation of a one-stop center District Information Management System (DIMS)**

This entails developing new ways of turning available data into usable information. It involves creating a holistic district information management system that brings together all the existing systems so that users can find all the information in one place. The system would create a feedback loop between data supply and use at the point of service delivery and would enable district officials to understand the geospatial complexities of key development indicators and target specific support to the places and people most likely to be left behind. This would have an impact beyond just one sector, supporting more inclusive education, health, and economic planning.

The DIMS would ease the work of the District Planner and the District Statistician by allowing them to systematically access all databases and datasets in the district for consolidation.

Specifically, the following actions need to be taken to address the problem of data silos:

- Integrate all district and sub-district data from all sources within a single repository
- Standardize common fields and formats in all datasets. Join up the data into a single database that is locally owned, robust and sustainable
- Create a multi-MDA partnership model led by UBOS that supports capacity development and ensures ownership and sustainability of the DIMS

- Build the capacity of local government stakeholders to develop relevant narratives that emerge from analyzing the collated data.
- Produce user-friendly visualizations to support these narratives in both digital and paper formats that would be relevant to the contexts and information capacities of communities
- Engage with all local stakeholders to discuss the strengths and weaknesses of the narratives and the underlying data
- Identify key data gaps
- Provide feedback to data suppliers to improve quality and fill gaps
- Training for staff, CSOs and other relevant development actors on how to use the system
- Work with the government to cost the implementation and maintenance of the system, as well as ongoing staff needs. Ensure that this is added to budgets so that it works beyond the lifespan of the pilot project
- As the project progresses, adapt and include CSO data and other locally available data sets
- Collaborate with think-tanks and local academics as this would be critical to this effort

A consolidated district data system will likely:

- Improve both the effectiveness and accountability of local government through better use of integrated data. Using data science would support the efficiency and effectiveness of local government
- Generate feedback on the use of data to improve data supply
- Create a virtuous circle between data supply and use at the point of service delivery, to support decision-making that results in inclusive solutions
- Foster data interoperability, ensuring that data can be joined up and presented in meaningful ways to ensure: better decision-making, monitoring of effectiveness and appropriate, needs-based resource allocations, therefore preventing places and people from being left behind
- In light of the COVID-19 pandemic, a District MIS would integrate district-level data, caseloads and improve interventions as well as provide data to guide social protection decisions that would cushion local people against the health and economic impacts of the disease

APHRC:

Further Research

This work did not exhaust all the avenues for investigation that are required to fully comprehend the national and sub-national data ecosystem.

A comprehensive diagnostic of the data ecosystem is needed

For proper assessment of the local level data ecosystem, a more comprehensive review of the current status and performance of various stakeholders of the current local statistical system would need to be conducted, one that allocates more time than was available for this assignment. This exercise would involve;

- A more rigorous examination of the legal and policy frameworks governing local/sub-national data systems in Uganda and extending to other data-associated sectors such as human rights and freedom of expression
- Identification of more data producers and their data sources beyond the sectors prioritized in this study
- Assessing the adequacy of resources to effectively sustain data production at regular necessary intervals
- Determining the ability of data users to absorb the data that is currently being produced
- Surveying the relevant literature available on data governance in Uganda and government websites to identify in-house data sources
- One-on-one interactions with necessary key stakeholders in districts, sub-counties, parishes and villages.

Linking the sub-national data ecosystem to the national statistical system: building capacity, partnerships and collaboration between sub-national data producers and users

Use the ‘ecosystem’ approach to promote synergies between all stakeholders in data production and use at sub-national levels. This would include:

- Promoting transactional processes in data and information production, processing and use
- Promoting inter-relationships among different components of the data value-chain, stretching from identification of community needs, through to data requirements and production, processing, analysis, policy inference, communication, monitoring, and feedback

Key activities under this component could include:

- Regular interactions among data producers, users and intermediaries in districts and between statistical regions. These would include information sharing, capacity development and joint planning
- Collaborative projects of mutual interest, such as studying health, nutrition, or education data for different districts or regions
- Producer-user workshops
- Interactions on data validity and quality
- Capacity-building workshops
- A regular **sub-national** Data Conference that will bring together all the stakeholders, with the overall objective of promoting critical thinking in the generation and utilization of data for evidence-based decision-making at the local government level. The conference could bring together different stakeholders in the data value chain involved in the production, dissemination and use of sub-national data

11. **Annex**

This process has been extensively documented and the materials used and secured before, during and after the data collection aggregated into a document library that has been provided as an open access online folder. The materials include the following:

1. Assignment administration
2. Key informants and their contacts
3. Data collection tool
4. Document library, including online and offline documents used in analysis
5. A summary of key data systems by sector

The google folder can be found here:

https://docs.google.com/spreadsheets/d/1Uxql4BRw2CWzZ7JAU1fiF3AcnE0fzmubBh_hzLTNPt8/edit#gid=1814995277