

SUMMARY FINDINGS FROM NATIONAL CONSULTATION IN SOUTH SUDAN



This report summarizes inputs gathered from participants in the EAC Digital Strategy National Consultation meeting that took place in Juba at the Radisson on 30th and 31st January, 2023. Information is supplemented by additional material online.

The report is organized into sections as follows:

- **Policy and regulatory environment** - highlights existing strategies, policies and laws
- **Key stakeholders** - lists key institutions and their roles with respect ICTs
- **Overview of digital assets and capabilities** - provides a high level narrative of assets and capabilities around digital applications and service architecture, as well as data collection, management, use
- **Detailed inventory of digital assets by sector** - full list of priorities, applications, and tools for developing digital applications
- **Technology and workforce considerations** - describes basic power, connectivity, and workforce considerations that relate to the enabling environment for digital applications

Information gathered through the national consultation will inform the EAC Regional Digital Strategy by allowing identification of existing assets that may contribute to regional digital applications, identification of common needs across countries, shared priorities for future investments, and existing resources to inform feasibility of a regional digital platform. Please review and provide suggested edits or additional information in “Suggesting” mode no later than **March 14, 2023**.

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EAC DIGITAL STRATEGY NATIONAL CONSULTATION: SOUTH SUDAN

Summary: South Sudan is still developing foundational infrastructure and policies to support digital applications and services. Activities around ICT development are focused on extending electricity access and connectivity infrastructure. Specific sectors do not yet have digital strategies or widespread use of digital applications, outside some use of DHIS2 within the health sector. South Sudan is placed to benefit from resources generated through other member states and EAC as its infrastructure enables greater digitization.

Policy and Regulatory Environment

The Government of the Republic of South Sudan recognizes the critical role ICTs can play in transforming government service delivery to citizens. Having declared independence in 2011, the ICT ecosystem is quite nascent; however, South Sudan is beginning to take steps to strengthen its digital ecosystem.

South Sudan has passed several Acts and a National Development Strategy that aim to guide aspects of digital transformation. These include the most recent development Strategy, [National Development Strategy \(R-NDS\) 2021- 2024](#), which charts broad goals for moving from aid to more sustainable development, anchored on collaboration with development partners. The strategy advocates for the procurement of broadband equipment to support e-governance.

South Sudan has in place a [National Communications Act 2012](#), which provides a policy foundation for many aspects of developing communication infrastructure. This act established the National Communications Authority as the main body responsible for ICT development, and outlines goals around spectrum allocation, network interoperability, establishment of a universal service fund (which became operational in 2018), number portability and domain names, and dispute resolution.

South Sudan has several supporting policies that would support development of data-driven services, including the [Right of Access to Information Act 2013](#) to provide access to information from public entities, and the recently passed the [Cyber crimes and computer misuse Provisional order 2021](#), to deter crimes committed through computer or computer system, internet, or other related activities. There is no formal data protection act or policy in place.

In 2015, South Sudan held its first ICT Development Conference (ICT4D) conference noted the underlying gaps to bridge such as basic infrastructure, government uptake of ICT, lack of human and technical capacity; all of which remain a challenge today.

Key Stakeholders

There are three key stakeholders responsible for developing and carrying out all ICT programs. Their roles and responsibilities are overlapping; however, the country looks to further develop MDAs with clear mandates, roles and responsibilities.

Ministry of Information, Communication Technology, and Postal Services (MICTPS): provides leadership, coordination, support, and advocacy on all ICT-related aspects within the country. The MICTPS is pursuing a fiber ring plan around the ministry complex to provide connectivity to MDAs and its staff. The initial priority is to continue to develop the infrastructure for a national data center at NCA that can support MDA website hosting and email services.

National Communications Authority (NCA): Charged with implementing the National Communications Act, the NCA was first appointed a Director General in 2016. The NCA's mandate is to coordinate, promote, regulate and monitor the ICT and telecommunications sectors in South Sudan, including supporting the adoption of digital technologies.

The NCA is focusing on establishing an ICT Authority, Government connectivity, providing eGovernment service (internet domain for hosting for government websites and emails), developing and connecting government MDAs to a national data center, and building capacity and compliance mechanisms.

The **South Sudan Media Authority** regulates the flow of communication entering and exiting the country via the MNOs. The Universal Access Fund is managed and operated by the Media Authority. The UAF contribution by MNOs (percentage of annual gross profit) is unknown as is the number of networks resulting from their contribution. Reportedly, there has been an increase in mobile phone subscribers by 3 million through the 33 towers put in place by the government since 2017. The Media Authority aims to develop an ICT Hub to scale connectivity, broadcasting services, phone charging stations, and SIM card sales.

The **National Bureau of Statistics (NBS)** is responsible for collecting, analyzing, and disseminating statistical data in South Sudan in compliance with international standards. NBS is the custodian of official data and the National Statistical System. NBS is guided by its ICT Policy, 2020 which provides guidelines on the permitted use of NBS data, access, data definition, file types, shared and conditional use.

OVERVIEW: DIGITAL ASSETS AND READINESS

CONSIDERATIONS

This section provides an overview of digital assets that guide investment in and activities in support of digital applications and services, as well as the processes that influence the collection, quality, and use of digitized data that could inform national or regional applications. Specific details on individual sectors are summarized in the following section.

Strategies. South Sudan does not have an overarching national digital strategy, nor do any specific sectors. The National Communications Act provides the most specific guidance for ICT development. Given more immediate needs in ICT infrastructure development and adoption of ICT technologies, South Sudan is not yet developing an **Enterprise Architecture Framework** or an **Interoperability Frameworks**, though participants noted value in doing so in the future..

Data Governance. No sector specific data governance structures and or processes exist. All data that is collected in south sudan is managed by The National Bureau of statistics. The National Bureau of Statistics is mainly responsible for managing economic statistics, census and surveys and demographic statistics. It is however unclear on who is responsible for categorizing, profiling, standardizing and securing data that is captured by the different sectors.

Data sharing. There are no formal guidelines governing data sharing developed yet. All sectors reported that data are generally held in Excel files and CSV reports and transmitted using email. Personal emails are typically employed as Government hosting and email uptake is limited. Participants noted that data are primarily contained within the sector and not shared out to other MDAs.

South Sudan-EAC data sharing. Currently, the only sector sharing data with the EAC is Health according to participants. The data sets shared contain negative COVID test results for the EAC Regional Electronic Cargo and Drivers Tracking System, which includes personal data (cargo driver name and mobile number). Data on animal outbreaks is collected through a standardized template, which is collected, stored, and managed by the Trade Sector.

Data management strategies(Standards, guidelines and standard operating procedures): Due to the limited digital data across the sectors, only the health sector collects, stores, and shares data digitally. Health sector efforts include the development of Health Management Information System (HMIS) guidelines, SOPs, and an M&E framework for data management; implementation is ongoing. However, there are no formal arrangements for data governance. For health data, management responsibility falls under the MOH Under Secretary, Director Generals (Senior MOH Management), and M&E staff, who manage health data, including data quality, access, and security.

Data quality and utilization: Agriculture/Climate change, Education, and Trade sectors lack the tools or procedures to ensure data quality. The health sector reported that standardized HMIS tools are used at the health facility level to ensure that the collected data is not only consistent but of good quality as well. In addition, participants reported that the sector relies on standardized data quality procedures from the World Health Organization and other regional bodies. Quality measures include Annual reviews, and quarterly, monthly, and weekly updates using the Quantified supervision checklist, Data quality assurance(DQA), Boma health initiative checklist, and IDSR supportive supervision checklist. The sector utilizes DHIS2, EWARS, Excel, SSP, and STATA to ensure the quality of health data.

Concerning utilization of data to support decision-making, no tools or procedures had been put in place by any sector to promote the utilization of data

Data centers and other infrastructure. South Sudan does not have public or private data centers in the country. Digital data from mobile networks is stored on mobile network operator infrastructure. The NCA has completed installation of the physical infrastructure for a data center (e.g. racks) with the NCA that is envisioned to host data from public entities. Further, several ministries do not have connectivity at all or reliable connectivity or computing devices available for staff. Hardware needs for regular use of digital applications remain high.

RELEVANT PRIORITIES AND ASSETS FOR A REGIONAL DIGITAL PLATFORM

Country-level assets and resources can offer critical foundations for developing a regional platform following an enterprise architecture approach. This section provides a snapshot of several types of such assets, including:

- **Key strategic documents** that outline specific EA resource documents that may serve as models for the region and any sector-specific priorities that can inform the selection of use cases for the platform.
- **Existing applications** already in use in-country that could be considered for further scale or inform similar regionally relevant applications.
- **Tools or building blocks** that can support future application development such as:
 - Resources for **creating interoperability** between digital systems, such as registries, data dictionaries, and interoperability frameworks
 - resources to **support sharing data across systems**, including data sharing protocols, data standards, and data security standards
 - **infrastructure that could support existing and future digital applications**, including data warehouses, data centers, and relevant infrastructure standards that may help harmonize infrastructure-sharing agreements.

The tables below capture assets at a national, sector-agnostic level, as well as those within specific sectors.

Sector-Agnostic Resources

Asset	Details
South Sudan's digital priorities and strategies	
Revised National Development Strategy (R-NDS) 2021- 2024	<ul style="list-style-type: none"> ● Emphasizes the use of ICTs to establish and/or strengthen institutions for transparent, accountable and inclusive governance. ● Calls for the procurement of broadband equipment to institute e-governance.
National Bureau of Statistics ICT Policy, 2020	<p>The policy address the following:</p> <ul style="list-style-type: none"> ● Physical access control ● Network access ● server infrastructure ● Infrastructure framework ● Configuration requirements ● Monitoring

	<ul style="list-style-type: none"> Roles and responsibilities of the users, IT Department Deputy Chief, and the IT Department and an organization chart <p>The policy is available in print form only and was shared with the Facilitators.</p>
ICT Strategy	Under development by the MICTPS
Notable digital applications and tools	
No general guidance for digital applications is available. NCA offers ad hoc guidance.	
Tools to support the development of digital services and applications	
No sector agnostic tools are available.	

Agriculture & Climate

**Assets from the agriculture and climate sectors are combined in the table below given that climate change and adaptation activities are often related to agriculture objectives and climate is relatively nascent as a sector. Where there were any specific assets related to climate change or adaptation reported, they are highlighted in green below.*

Asset	Details
South Sudan's digital priorities and strategies	
Sectoral strategies	Under development
Services or functionalities of interest for digitization	<ul style="list-style-type: none"> Agricultural produce market information management Livestock disease mapping Livestock and Fisheries Import and export permit clearance Weather Information management Crop diseases and pest Mgt system Forest land and land use for Agriculture Seed field inspection management Linkages of weather information with Agricultural seasons

Notable digital applications and tools	
Animal Resource Information System	<ul style="list-style-type: none"> Collects, collates and analyzes animal resource data. <i>(System is developed but not yet deployed; partner is African Union-Inter African Bureau of Animal Resources)</i> e.g Livestock Products
Crop and Livestock Market Information System	<ul style="list-style-type: none"> Collects and shares pricing, quantity of available livestock crop (in auction yard), import and export volume data Register, inspect, called quality of seed and producers and issue certification Seed inspection & certification Management System (SICMS)
Tools to support the development of digital services and applications	
Registries	No registries have been developed
Digital data collection tools Training	No data collection tools reported Training of seed inspectors locally

Education

Asset	Details
South Sudan's digital priorities and strategies	
Sectoral strategies	Under development
Services or functionalities of interest for digitization	<ul style="list-style-type: none"> Student information management for tertiary educational institutions
Notable digital applications and tools	
None noted	

Tools to support the development of digital services and applications	
Registries	The education sector keeps Excel files with student registration details.

Health

Asset	Details
South Sudan's digital priorities and strategies	
National Health Policy 2016-2026	The strategy supports investments in appropriate ICT, mobile applications and web-based systems to improve reporting, analysis, dissemination, and use of health data.
Services or functionalities of interest for digitization	Services that prioritized by the sector for digitalization include; <ul style="list-style-type: none"> • Disease surveillance, assessment, survey, early warnings and response • Birth and death certification • Human Resources for Health monitoring, training, and supervision • Client Referral pathways and follow-up • Telemedicine
Notable digital applications and tools	
DHIS2	<ul style="list-style-type: none"> • Collects aggregated data about diseases but is partially implemented (primarily for HIV/AIDS activities)
Logistics Management Information System(LMIS)	<ul style="list-style-type: none"> • Collects, processes, and reports on medicine consumption at the central level
Early Warning Alert and Response System (EWARS)	<ul style="list-style-type: none"> • Mobile phone based reporting of priority disease outbreaks
Tools to support the development of digital services and applications	
Registries	No formal registries. The sector keeps Excel files for multiple service types including birth registration, HIV viral load.

Digital data collection tools	ODK/Kobo collect Survey application GIS data to map health facilities

Trade/eCommerce

Asset	Details
South Sudan's digital priorities and strategies	
Sectoral strategies	Under development
Services or functionalities of interest for digitization	None reported
Notable digital applications and tools	
eTax platform	Supports assessment and collection of taxes
Free Balance	Supports all processes related to the preparation of the national budget
Tools to support the development of digital services and applications	
Registries	No sector based registries exist
Digital data collection tools	Manual questionnaires

TECHNOLOGY INFRASTRUCTURE AND WORKFORCE: CONTEXT AND INVESTMENTS

A handful of projects are planned or underway to support additional investment in power, digital infrastructure, and workforce, as noted below.

Power and Electrification Projects

Current Context: With only 7.2% of the population accessing electricity (urban 13.9%, rural 5.6%) in 2020, according to the World Bank, prioritizing power and electrification investments are critical for South Sudan to fully participate in and benefit from regional digital applications.

- [South Sudan Energy Access Project](#) is a World Bank funded project intended to deliver solar and battery-based off-grid energy solutions for selected public institutions, with priority for Payam-level health care centers (PHCCs) and secondary schools. These two facilities (PHCC and secondary schools) require more electricity for service delivery than lower tier facilities. The project also aims to support other public facilities, e.g., government administration buildings and publicly shared water supply facilities.

Digital Infrastructure Projects

Current context: South Sudan has a high need for additional investment in basic digital infrastructure and connectivity to support digital applications and services. The 2021 [data from ITU](#) shows 48% of the population is covered by mobile-cellular networks, [GSMA](#) estimates 66% of the population covered by a 3G network, and 16% penetration of mobile-broadband connections, making data-consuming apps infeasible for much of the population. ITU estimates internet use at 6%.

- Liquid Intelligent Technologies signed an MoU in 2020 with South Sudan to lay 200 km of fiber backbone to connect the Uganda border to Juba. Present status of the project is unknown.
- South Sudan and Djibouti have signed an MoU in late 2022 to lay fiber optic cable from Djibouti to the South Sudan's capital city Juba via Ethiopia. The MICTPS and the government of Djibouti officials plan to establish a technical committee to oversee the project, though present status is unknown.
- In 2022 the World Bank approved a \$120 million International Development Association (IDA*) grant financing for South Sudan to continue to improve access to basic infrastructure and to strengthen community institutions, and to enhance flood resilience. The [South Sudan Enhancing Community Resilience and Local Governance Project Phase II \(ECRP-II\)](#) is a five-year project that aims to strengthen the institutional capacity of local communities to deliver critical services such as access to electricity, clean water, health care, and education, as well as develop integrated disaster risk management systems at the national and sub-national levels.
- The NCA in collaboration with the Media Authority is increasing population connectivity by funding (Universal Access Fund) and installing telecommunications towers, a role generally met by Mobile Network Operators (MNOs). Additionally, NCA will soon launch an internet exchange point as internet is accessed through exchange points in Uganda and Kenya.

- Participants noted South Sudan is actively working on a connectivity route (laying fiber) from Juba to Kenya with additional routes being discussed to connect to the Central African Republic, the Democratic Republic of Congo, Ethiopia and Djibouti.

ICT Workforce

Current context: Participants in national consultations affirmed continued need for professionals with digital skills.

There were no large digital skill development initiatives noted, though some organizations are starting to offer short courses online to enhance digital skills. The Community Empowerment for Progress organization supports periodic cohorts of graduates on its [Digital Innovation and Skills Hub](#), an e-learning platform offering courses in Basic IT skills among others.

However, ICT skills remain a challenge throughout much of the workforce and specialized skills for common open-source tools, including DHIS2, will continue to be a need for the country to build from and customize existing tools.