SUMMARY FINDINGS FROM NATIONAL CONSULTATION IN TANZANIA

This report summarizes inputs gathered from participants in the EAC Digital Strategy National Consultation meeting that took place in Dodoma November 21-22, 2022. Information is supplemented by additional material online where available.

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.**

Financial support for national consultations was provided by PATH and USAID

EAC DIGITAL STRATEGY NATIONAL CONSULTATION:

TANZANIA

Summary: Tanzania continues to build its ICT assets and capabilities and is currently focused on developing policies, regulations, and infrastructure to support its digital transformation. The recently established e-Government Authority (e-GA) has developed a range of resources to guide MDAs in developing a contextualized enterprise architecture framework to drive development, harmonization, and integration of digital assets. The sectors may also leverage the recently developed Health Enterprise Architecture as it provides a comprehensive foundation to build upon. The government has several initiatives to promote digital access, including the National Broadband Policy and the National e-Government Strategy. The recently passed Personal Data Protection Act of 2022 will require an implementation plan and funding to support implementation. The government is also working to increase access to ICTs by investing in digital infrastructure, such as fiber optic cables, base stations, and Wi-Fi hotspots.

Policy and Regulatory Environment for ICTs

Tanzania has multiple national foundational documents guiding policy and investments in ICT and relevant aspects of the enabling environment.

Tanzania Development Vision 2025 (Vision 2025) provides the direction and philosophy for long-term development. By 2025, Tanzania wants to achieve a high quality of livelihood for its citizens, peace, stability and unity, good governance, a well-educated and learned society and a competitive economy capable of producing sustainable growth and shared benefits.

Tanzania does not yet have a national digital strategy; however, the many e-GA documents provide the building blocks and direction to facilitate development of a national digital strategy and harmonized digital strategies across sectors. Sectors are encouraged to utilize e-GAs technical assistance and consultation services in developing their digital assets and capabilities.

e-GA has published the Strategic Plan 2021/22 – 2025/26 with four notable objectives aimed at strengthening the digital ecosystem: 1) implementations of national anti-corruption strategies enhanced and sustained, 2) e-Government provision by public institutions enhanced and sustained, 3) compliance to policies, laws, regulations, standards, and guidelines related to , e-Government initiatives in public institutions enhanced, and 4) capacity of e-GA to carry out its mandated functions.

Tanzania Statistical Master Plan 2009/10 - 2013/14, components of the plan include institutional development and legal reforms, development of statistical infrastructure, physical infrastructure and equipment development.

Tanzania has passed several laws that support increasing digitalization of public sector activities and services, including the 2015 Cybercrimes Act, and the updated Electronic Transactions Act, 2022. The Fair Competition Act 2003 is Tanzania's consumer protection act. While these documents will be important foundational documents for a regional digital platform, existing acts will need to be updated.

Data protection policies. Tanzania has recently passed the Personal Data Protection Act of 2022. Support for implementation of the Personal Data Protection Act may be needed as well as harmonization at the regional level.

The health sector includes some guidance on data protection through its strategy and Health Enterprise Architecture, but all sectors need guidance on interpretation of legislation on an on-going basis.

Key Stakeholders for eGovernment Services

Tanzania has a cross-cutting institution with a key role in digital transformation across sectors. The e-Government Authority (e-GA) is a public institution established in 2019 with the authority to coordinate, manage and promote efforts related to the digital ecosystem of Tanzania's public sector. e-GA oversees the implementation of policies, laws, rules, standards, and guidelines for public institutions. Sectors are also able to utilize e-GA technical assistance and consultation services to develop their digital assets and capabilities.

e-GA provides a host of documentation aimed at aligning and strengthening various MDAs' digital assets and capabilities. These include but are not limited to access to secure and reliable internet infrastructure and systems; guidance and coordination of cyber security efforts; increasing institutional capacity of public institutions; and utilizing e-GA standards and guidelines for planning, developing, and implementing government services. Several policies have been established or updated in 2022, reflecting the government's priority in establishing and harmonizing the digital ecosystem across all sectors. The authority does not yet have a compliance mechanism to ensure all public institutions follow their standards and guidelines, and many sectors currently rely on ad hoc methods of developing, implementing, and managing digital activities within their sector. However, e-GA's current Strategic Plan aims to close this gap.

OVERVIEW: DIGITAL ASSETS AND READINESS CONSIDERATIONS

eGovernment Resources. e-GA provides policies, standards and guidelines aimed at aligning and strengthening various MDAs' digital assets and capabilities. e-GA has multiple published documents on their website to assist sectoral ICT development. e-GA provides technical assistance to MDAs in understanding, developing and implementing ICT policies, standards, systems, and ICT training. A list of key e-GA resources are found below in the Sector Agnostic Resource table.

Architectures to guide development of digital services and applications. The e-Government Infrastructure Architecture – Standards and Technical Guidelines provides information on technology infrastructure supporting government operations such as server, workstation, storage and network

infrastructure, software licensing, ICT disaster recovery and business continuity, ICT vendor management, manpower and service management aspects.

eGovernment Information Architecture – Standards and Technical Guidelines elaborates on the information architecture directives for data creation, availability, ownership, security and confidentiality, archival and retention, use of common data and metadata definition and standards.

e-Government Architecture Vision – Standards and Technical Guidelines provides guidelines and information related to the whole of government, government services, data, applications and technology reference models are defined.

Interoperability. The e-Government Interoperability Framework – Standards and Technical Guidelines (e-GIF) provides standards and technical guidance for the government to share, collaborate, integrate information and organize its processes by use of common open standards.

Sector-Specific Digital Strategies. The health sector is the only sector with a national digital strategy as well as an Enterprise Architecture framework. All other sectors, aside from trade, have a national sectoral strategy or development plan, yet these documents do not include specific strategies or priorities related to digitalization.

Health sector strategies. The health sector is the only sector to date that has both a sectoral plan and sector specific digital strategy: the Tanzania's Health Sector Strategic Plan, July 2021-June 2026. Tanzania also has a national digital health strategy, the National Digital Health Strategy, 2019-2024. Both are in use and aligned with each other.

The mutually reinforcing strategic plan and national digital health strategy provide clear objectives for the sector. In addition to a national health strategy, in September 2020 Tanzania published the Tanzania Health Enterprise Architecture (TZHEA). The architecture is intended to optimize the implementation and utilization of digital health across Tanzania's health sector. The framework is currently under implementation and has been utilized to guide the development of the Health Facility Registry (HFR) as well as the client registry, which are discussed in more detail below. Overall, the TZHEA is a key asset guiding development of applications and services in the health sector.

Agricultural sector strategies. The Agricultural Sector Development Strategy II, 2015/16-2024/25 is the guiding document for the sector. It aims to transform the agricultural sector into a modern, commercial, highly productive, resilient, competitive sector in the national and international market. This is consistent with the long-term development vision, yet the sector does not have a specific digital strategy articulated and, consequently, no specific funding for digital initiatives nor efforts within the agriculture sector to invest in digital skill development of its workforce. Guidance on digital initiatives in the agriculture sector largely comes from e-GA.

Climate sector strategies. Similar to agriculture, the climate sector has a strategy, the National Climate Change Response Strategy, 2021-2026, yet does not have specific digital initiatives identified within it. Leadership and governance related to digital assets and capabilities are developed in collaboration with the Vice President's Office, Division of Environment, Information, Communications and Technology Unit, if and when they are established.

The National Climate Change Response Strategy, 2021-2026 specifies the need to provide incentives to enhance private sector investments in climate smart technologies. Climate investments overall are

projected to be costly and overwhelming for government budgets, but there is no specific mention of funding for digital assets and capabilities.

Education sector strategies. The education sector is embedded within the MoEST and is guided by the Education Sector Development Plan, 2016/17-2020/21, which "expired" in 2021. There is not yet a digital strategy for the sector. Within the Ministry, there is an ICT Unit; however, the extent of stakeholder engagement and specific digital governance structures is not clearly defined.

Within the Education Sector Development Programme, there is a Secondary Education Development Programme (SEDP) that includes a focus on the expansion of the Education Management Information System (EMIS), which is one of the main use cases identified by Partner State representatives at the kickoff meeting in Arusha. This system is currently under development and aims to improve the accuracy, quality, and usability of information relevant to secondary education within the country.

Trade sector strategies. Tanzania does not have a national trade or e-commerce strategy; however, Tanzania's Third Five Year National Development Plan 2021/22 – 2025/26 encompasses several key trade interventions, several of which may be facilitated by digitalization. For example, identifying better market access opportunities for domestic produced goods and services, and reducing logistics costs through improved efficiency and reliability of transport infrastructure, border agencies, logistics regulators and service providers.

The trade sector is aligning its eCommerce efforts to the EAC e-Commerce Strategy, 2021, which will complement various strategic national initiatives for economic and human resource development as well as those for infrastructure. The EAC e-Commerce Strategy is prescriptive and can guide Tanzania in developing its own national trade strategy. (For highlights, see the text box to the right).

Although the EAC e-Commerce Strategy is new, it serves as a guide for country e-commerce and trade strategy development. At the time of this writing, an implementation strategy for regional e-Commerce is underway.

Digital governance and data management. Regarding data management and data governance, security, and privacy, again, all sectors except the health sector are at an early stage. No clear data policies guidelines on data capture, processing, storage, and security have been developed or implemented for agriculture, climate, trade, or education.

The Institutional Data Dictionary Technical Standards and Guidelines: provides the standards and technical guidelines for creating a data dictionary which is a set of information describing the contents, format and structure of a data and the relationship between its elements, used to standardize and control
access to and manipulation of data. However, there are numerous data standards in use in Tanzania, but they have not been fully harmonized.

National data sharing mechanisms. The Electronic Data Sharing and Exchange Guidelines provides guidance on electronic data sharing and exchange across public institutions to promote interoperability and integration of information systems while ensuring privacy and confidentiality. The document contains a data sharing agreement template MDAs are mandated to utilize.

Criteria for Data Sharing and Exchange through GovESB provides the criteria for data sharing and exchange through the government ESB as the single platform to connect all public institution systems

and applications for an integrated digital ecosystem making services accessible to other government MDAs and citizens.

Sectoral data sharing. The health sector has several instances of data sharing, including use of e-GA's data sharing template, located in the Electronic Data Sharing and Exchange Guidelines. However, not all data sharing is supported by a data sharing agreement (sharing still occurs with ad hoc processes).

Tanzania-EAC data sharing. Participants at the National Consultation were unaware of Tanzanian data sharing with the EAC.

Data centers and servers. Tanzania currently has one government operated national data center hosting cross-sectoral public data, which is hosted and managed by e-GA. There is also the Tanzania National Internet Data Center, operated by Tanzania Internet Service Providers Association (TISPA). While local public institutions have previously been encouraged to use the government facility to most efficiently use available infrastructure and ensure that the data centers used are secure.

Specific guidance on developing and maintaining a server is given in the Data Center Standards for Public Institutions, noted above, which is issued by e-GA to help public institutions determine where to host ICT applications and avoid unnecessary investment in new data centers or construction of data centers that do not meet minimum standards.

Tanzania recently introduced a "primary data server" requirement in the Ministry of Finance and Planning's Finance Act 2021. This act requires a taxpayer who maintains documents in electronic form to maintain a server in Tanzania that stores data that is created or collected by a taxable person or liable person in the ordinary course of business. While this appears to be primarily for tax purposes and "data" was not clearly defined in the Act, it has raised concerns about the ability of Tanzania to utilize cloud technology, and the implications for sharing many kinds of data across the region. While this Act is not specific to health data, the precedent it sets for local hosting may present a challenge for regional data sharing more broadly.

Data hosting requirements increase hardware and supporting infrastructure costs, real estate costs for the hardware space, and human resource costs. High public data hosting costs impact the development of digital services, for example, the education sector is unable to scale their e-learning platforms due to high e-GA data center costs.

As of late 2022, private sector firms are planning for additional data center development in Zanzibar and elsewhere in Tanzania by a variety of companies including Tigo, Roxio, Zantel, and Wingu. With both public and private data center development growing in the country, conformance to standards will be increasingly important to optimize utilization of data center resources.

RELEVANT PRIORITIES AND ASSETS FOR A REGIONAL DIGITAL PLATFORM

Country-level assets and resources can offer critical foundations for the development of 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, as well as any sector-specific priorities that can inform 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 system 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 be helpful for harmonizing 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
Sector-specific digital priorities and strategic guidance	
eGovernment Integration Architecture – Standards and Technical Guidelines	Provides information on integration architecture (reference architecture framework) such that various applications within public institutions are integrated to enable real-time seamless information exchange across government.
Creation of Government ICT Management Documents – Technical Guide	The document aims to ensure that all ICT management documents are standardized across Government. The guide provides guidance on a document's format, vital information and suggested indexing.
Creation of ICT Security Policy - Technical Guidelines	Provide guidelines for adapting the ICT Security Policy to the needs of Public Institutions.
e-Government Security Architecture – Standards and Technical Guidelines	Defines how the Public Institutions securely and economically protect business functions, including public access to appropriate information and resources, while maintaining compliance with the legal requirements established by existing statutes pertaining to integrity, confidentiality, accountability, availability, and assurance.
Electronic Data Sharing and Exchange Guidelines (July, 2022)	Promotes interoperability and integration of information systems to securely and effectively facilitate the efficient exchange and

	sharing of data among public institutions securely and effectively.
Government Hardware and Software Standards	Prescribes standards for hardware and software specifications to be adhered to by public institutions when procuring ICT resources. The standards increase effectiveness in acquiring and administering resources by promoting compatibility and interoperability of workstation hardware and software, to ensure that these standards are aligned with the enterprise architecture business goals and processes, moreover, to ensure cyber security protection.
Tools to support the development of digital services and applications	
Data management resources	Institutional Data Dictionary Technical Standards and Guidelines
Interoperability platforms or frameworks	Electronic Data Sharing and Exchange Guidelines (July, 2022)
Data security	Creation of ICT Security Policy - Technical Guidelines
Data Servers and Centers	Data Center Standards for Public Institutions
Technology infrastructure	Government Hardware and Software standards Guidelines for Development, Acquisition, Operation and Maintenance of eGovernment Applications

AGRICULTURE

Asset	Details
Sector-specific digital priorities and strategies	
Agricultural Sector Development Strategy - II 2015/2016 – 2024/2025	The strategy aims to transform the agricultural sector into a modern, commercial, highly productive, resilient, competitive sector in the national and international market.
Agricultural Digital Strategy	Not developed and no reported plans to develop a digital strategy.
Notable digital applications	

Animal Disease Surveillance (EMAS, EVET)	
Quality Control Animal Product Trade (MINIS)	
Tracking, Traceability System	
Electronic Catch Assessment Survey (ECAS)	
Revenues Information Payment of the Government (FIRCIS)	
Fisheries Management System (FMS)- Stock and Research	
WildLife Tracking System	
Fish Catchment System	
Tools to support development of digital services and applications	
Registries	• Animal Identification Registry
Interoperability Platforms or Frameworks	No sector-specific platform or framework; however, e-Government Interoperability Framework – Standards and Technical Guidelines (e-GIF) provides guidance on the interoperability of digital solutions.
Data Sharing Mechanisms	The following e-GA documents are utilized to guide data sharing data with MDAs and external entities: • Electronic Data Sharing and Exchange Guidelines, 2022 • Criteria for Data Sharing and Exchange in the Government Enterprise Service Bus (GovESB), 2022.
Data Standards	None reported.
Technology Infrastructure	Technology Infrastructure Standards • No sector-specific technology infrastructure exists. The sector follows e-GA standards. Data Servers and Centers • Data is hosted at the National Data Center within e-GA.

CLIMATE

Asset	Details

Sector-specific digital priorities and strategies	
National Climate Change Response Strategy 2021-2026	The strategy aims to transform the agricultural sector into a modern, commercial, highly productive, resilient, competitive sector in the national and international market.
National Climate Change Response Strategy, 2021-2026	Limited strategic plans for the development of ICT; however, the strategy specifies the need to provide incentives to enhance private sector investments in climate smart technologies.
Climate Digital Strategy	Not developed and no reported plans to develop a digital strategy.
Notable digital applications	
Early Warning System	Developed and managed by the Tanzania Meteorological Agency (TMA).
Tools to support development of digital services and applications	
Registries	None reported.
Interoperability Platforms or Frameworks	No sector-specific platform or framework; however, e-Government Interoperability Framework – Standards and Technical Guidelines (e-GIF) provides guidance on the interoperability of digital solutions.
Data Sharing Mechanisms	Two e-GA guiding documents are utilized: ● Electronic Data Sharing and Exchange Guidelines, 2022 ● Criteria for Data Sharing and Exchange in the Government Enterprise Service Bus (GovESB), 2022.
Data Standards	None reported.
Technology Infrastructure	Technology Infrastructure Standards ● No sector-specific technology infrastructure exists. The sector follows e-GA standards. Data Servers and Centers ● Data is hosted at the National Data Center within e-GA.

HEALTH

Asset	Details
Sector-specific digital priorities and strategies	
Tanzania Health Sector Strategic Plan (HSSPV) 2021-2026	Key ICT objectives include: ● Developing sustainable ICT systems in the domains of data management, processing and reporting, medical decision-making and e-learning for health workers. ● Defining regulations for interoperability and harmonization of systems. ● Developing a national investment plan to guide all partners in ICT development. ● Establish a Centre for Digital Health. ● Establish a legal framework for protecting the security of data, privacy, and confidentiality of patients. ● Regulations for the use of personal data for management and research.
Digital Health Strategy	The following five goals are aimed at accelerating the transformation of the Tanzanian health care system through innovative, data-driven, client-centric, efficient, effective, and integrated digital health solutions: ● Strengthened digital health governance and leadership ● Improved client experience through efficient provision of high quality health services ● Empowered health care providers and managers to take evidence-based actions ● Sustained availability of health resources ● Standardized information exchange
Notable digital applications	
DHIS2	● Collects routine aggregate health data from the community and health facility level.
eIDSR	● eIDSR is a data collection system linked to DHIS2 and captures data on epidemic-prone diseases; it is unknown as to its geographic deployment across Tanzania.
Electronic Logistics Management Information System (e-LMIS)	● Electronic logistics management information system for health commodities. e-LMIS includes most major health programs in the country. eLMIS links health facilities with the central commodities store to collect and distribute logistics data in real time.
Tools to support development of digital services and applications	

Registries	• Health Facility Registry (HFR) • Health Work Registry (HWR) Under development: • Client Registry, *key impediments to developing the client registry is the issue of a unique patient identifier. Tanzania has about seven patient identifiers in use, which have yet to be harmonized.* • Product Registry • Shared Records
Digital Data Collection Tools	• HMIS data collection tools are utilized, e.g., HMIS Form, ODK tools.
Interoperability Platforms or Frameworks	• A Health Information Mediator (HIM) (e.g., ESB) exists and allows exchange of information among the disparate digital platforms within the health sector. Unable to confirm if the HIM is interoperable with eGA's ESB.
Data Sharing Mechanisms	• An MoU is in place with the MoH and Tanzania Commission for Universities (TCU) for health research. • The MoH and Tanzanian Public Service Office agreement exists for data sharing. The e-GA data sharing template was leveraged in its creation.
Data Standards	Proposed standards include HL7, FHIR, DICOM, ISO/IEEE11073; however, the standards have not been contextualized for Tanzania.
Technology Infrastructure	Technology Infrastructure Standards • No sector-specific technology infrastructure exists. The sector follows e-GA standards. Data Servers and Centers • Data is hosted at the National Data Center within e-GA.

EDUCATION

Asset	Details
Sector-specific digital priorities and strategies	
Education Sector Development Plan 2016/17-2020/21	The strategy focuses on ensuring equitable access to education and training for all, including the most disadvantaged.
Education Sector Digital Strategy	Not developed and no reported plans to develop a digital strategy.

Notable digital applications	
Education Management Information System (EMIS)	
eLibrary Services	
eLearning platform	
Open University Training Service	
Student Loan Board Application (TCU)	
University Admissions Systems (application process)	
Student Management Records (SMR and SR2)	
Exams Results system	
Staff Leave system	
Staff evaluation (OPRAS)	
Tools to support development of digital services and applications	
Registries	● Student Records Registry
Interoperability Platforms or Frameworks	No sector-specific platform or framework; sector replies on e-GA Standards and Technical Guidelines (e-GIF).
Data Sharing Mechanisms	Relies on e-GA data sharing guidelines and data sharing template.
Sector-Specific Technology Infrastructure	Technology Infrastructure Standards ● Relies on e-GA technology infrastructure guidelines. Data Centers and Servers ● Data is hosted at the National Data Center within e-GA.

Trade/eCommerce/Digital Finance

Asset	Details
Sector-specific digital priorities and strategies	
No sectoral strategy or digital strategy.	• The National Development Plan 2021/22 - 2025/26 encompasses several key trade interventions, several of which may be facilitated by digitalization. For example, identifying better market access opportunities for domestic produced goods and services, reducing logistics costs through improved efficiency and reliability of transport infrastructure, border agencies, logistics regulators, and service providers. • eCommerce efforts are aligned to the **EAC e-Commerce Strategy, 2021**, which will complement various strategic national initiatives for economic and human resource development as well as those for infrastructure. The EAC e-Commerce Strategy is prescriptive and can guide Tanzania in developing its own national trade strategy.
Notable digital applications	
Government Payment Gateway	• Centralizes payment service to provide citizens with a consistent and uniform experience while effecting payments online.
Government accounting system (MUSE D-Fund MIS)	• Accounting software to support Government financial and accounting business processes.
In development	• Digital payment system • Cargo and driver tracking system
Tools to support development of digital services and applications	
Registries	None reported.
Digital Data Collection Tools	No reported data collection tools.
Interoperability Platforms or Frameworks	No sector-specific platform or framework; however, e-Government Interoperability Framework – Standards and Technical Guidelines (e-GIF) provides guidance on the interoperability of digital solutions.

Data Sharing Mechanisms	Following e-GA guidelines and template as well as supplementing with a Data Sharing Individual Form, and and Data Sharing Agreement when sharing data with external MDAs.
Sector-Specific Technology Infrastructure	Technology Infrastructure Standards ● Relies on e-GA technology infrastructure guidelines. Data Centers and Servers ● Data is hosted at the National Data Center within e-GA.

TECHNOLOGY INFRASTRUCTURE AND WORKFORCE: COUNTRY CONTEXT AND INVESTMENTS

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

Power and Electrification Projects

Current context: In Tanzania, 39% of the population has access to electricity, with urban locations at 73% and rural locations at 22%, according to the World Bank, 2020. Connectivity rates are lower in rural areas, and is the target of on-going digital infrastructure projects. Consistent and reliable access to electricity will be required to support nearly all applications that may be prioritized following the regional digital strategy. While individual applications can be designed for offline use, maintaining servers, data centers, and information exchange will require widespread electrification.

- Tanzania and the World Bank's Rural Electrification Expansion Program aims to increase rural area electrification and scale up the supply of renewable energy and needed infrastructure (e.g., sub stations, poles, lines) to rural areas. However, participants indicated investments have not materialized and last mile connectivity remains a challenge.

- There are on-going efforts to strengthen electricity access and create opportunities for power exchange among Partner States, including an **East African Power Master Plan** and the **EAC Cross Border Electrification Programme**.

Digital Infrastructure Projects

Current Context: Tanzania has significantly improved its communications infrastructure, a key ingredient to its digital transformation efforts. The 2022 GSM report indicates that 60% of the population has broadband connections, 83% have access to 3G, with mobile phone penetration at 88%. However, despite the significant efforts, internet penetration, as reported in DataReportal's Digital 2022 report, stands at 25%. The government of Tanzania is undertaking several initiatives to improve its communication infrastructure. Tanzania has been ordered by the EAC Sectoral Council on Transport, Communications, and Meteorology to harmonize their roaming rates* with community standards by August 30, 2023. Both Tanzania and Burundi are required to present the tariff harmonization status at the next EAC Heads of State Summit.

**In 2014, the EAC Council of Ministers developed a roaming framework aimed at harmonizing roaming rates in the region, via a platform called One Network Area. The framework, approved by Heads of state in 2015, imposes a cap on roaming prices as well as the removal of surcharges on cross-border telecom traffic.*

The **Digital Tanzania Project** is jointly implemented by the Ministry of Information, Communication and Information Technology and the President's Office, Public Service Management and Good Governance, with multiple other stakeholder groups including PO-RALG and e-GA. The project includes $150 million to strengthen policies, regulation and institutional capacity to promote ICT infrastructure development, plans to strengthen affordable connectivity to all citizens, to develop digital platforms and services by strengthening government capacity to deliver citizen services.

The **Digital4Tanzania e-Governance Support Programme** with the European Union is bringing support of EUR 35 million to strengthen the digital economy, connectivity in rural and peri-urban areas, as well as developing digital trade support.

At the national level, Tanzania's 2016 National ICT Policy articulates the various efforts the government has taken for telecommunications. These efforts include investment in ICT infrastructure, construction of a **National ICT Broadband Backbone (NICTBB)** and supporting investment in the two undersea cable systems – the **Eastern Africa Submarine Cable System (EASSY)** and **Southern and Eastern Communications Network (SEACOM)**. Other efforts to strengthen infrastructure include the development of PPP policy and legislation, establishment of the **Universal Communications Service Access Fund (UCSAF)** to facilitate ICT investment in rural and urban underserved areas, and development of Internet Exchange Points. Together, these efforts will help to expand connectivity and internet access across the country in addition to supporting individuals' and institutions' capacity to connect to a regional digital platform.

Spectrum management is another key area for ICT infrastructure development for equitable mobile broadband penetration. Spectrum allocation efforts made by the Government include enactment of the Electronic and Postal Communications Act (EPOCA) in 2010 to guide assignment, management, and regulation of spectrum resources. The Tanzania Communications Regulatory Authority (TCRA) is responsible for management and assignment of spectrum and other telecommunications resources. Tanzania does not have a policy framework to guide allocation and efficient utilization of spectrum, which may contribute to limited competition and high prices of telecommunications services.

ICT Workforce

Current context: All sectors aside from Education reported unmet human resource needs to support increased digitization in their sectors. Under its mandate, e-GA provides various capacity building training for information technology (IT) officers and other public servants to facilitate the implementation of e-Government efforts in Tanzania. Participants in national consultations were unaware of specific national capacity building initiatives or sectoral initiatives to develop ICT capacity and skills within their respective sectors. However, In the education sector, Tanzania has many institutions offering ICT programs through universities and e-GAs ICT capacity building services.

MoEST, in collaboration with other MDAs, is currently working towards improving basic skills in literacy and numeracy for children aged 5 to 13 years, which will improve overall digital literacy. Tanzania has several university programs and vocational training programs to increase ICT institutional capacity. Specific universities with ICT programs include Mbeye University of Science and Technology, University of Dar es Saalam's College of Information and Communications Technology, University of Dodoma's College of Informatics and Virtual Education, and St Joseph's University.

The health sector does not have a specific digital skills framework. However, the Government of Tanzania (GoT) has committed to supporting the requisite human resources for health as articulated in the Digital Health Strategy. The strategy specifies the GoT will continue to oversee and coordinate the training of human resource for health (HRH). The MoH will take the lead in preparing curricula and will oversee training courses in public and private health colleges to enhance the quality of training and to enhance the link between training and practice in health care. There are several capacity building initiatives suggested in Tanzania Digital Health Investment Roadmap 2017-2023, e.g., eLearning platform for health care workers, training for health workers, national data users and district data users. Funding and implementation status is unknown.

Agriculture, climate, education, trade sectors lack workforce capacity building initiatives; however, e-GA provides a variety of capacity building training initiatives for IT officers and other public civil servants to facilitate the implementation of e-Government efforts across Tanzania.