

Module 2

Country data profile –
Tanzania

Guide

Agriculture data country profile – Tanzania

This document is a learning resource for Bill & Melinda Gates Foundation program officers that provides background information on the data policy and a wider context for agriculture projects in specific countries.

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Questions

Data and technology – capacity and infrastructure

This section provides an overview of the capacity and infrastructure relating to data and technology in place in Tanzania.

What is the country's access to technology and internet like?

- According to the Tanzania Telecommunications Regulatory Authority (TCRA) Quarterly Statistics for the third quarter of 2020, mobile telecommunications subscriptions grew from 48.9 million to 49.2 million from July to September 2020. The fixed network connection dropped from 75 thousand to 72 thousand subscriptions and mobile internet access has grown by 2.95% from 27.1 million users in June, , to 27.9 million in September.¹

In the last ten years, mobile telecommunications subscriptions have grown by 132.6% from 21.2 million in 2010, to 49.2 million subscriptions in September 2020. Fixed network connections have dropped by 53.3%, from 174.5 thousand in 2010,² to 72.8 thousand subscriptions in September 2020.³ Mobile network internet access has grown by 425%, from 5.3 million users in 2020, to 27.9 million users in September 2020. Internet penetration in the country was at 46% in December 2019⁴ compared to 12% in 2011.⁵ Since the launch of M-PESA mobile financial services in April 2008, financial inclusion has expanded in Tanzania, especially in rural areas. According to TCRA Quarterly Statistics, mobile money transactions from all operators valued 11.6 trillion Tanzania shillings by September 2020.⁶

¹ TCRA (2020), September Quarterly Communications Statistics – Accessed 25th December 2020

² TCRA (2010), December Quarterly Communications Statistics – Accessed 25th December 2020

³ TCRA (2020), September Quarterly Communications Statistics – Accessed 25th December 2020

⁴ TCRA (2020), September Quarterly Communications Statistics – Accessed 25th December 2020

⁵ TCRA (2015), December Quarterly Communications Statistics – Accessed 25th December 2020

⁶ TCRA (2020), September Quarterly Communications Statistics – Accessed 25th December 2020

- Electricity Coverage

Coverage of internet and mobile network operators in the country is highly dependent on penetration of electricity coverage in both rural and urban areas. As the penetration of internet rose from 12% in 2011⁷ to 46% in 2019⁸, penetration of electricity in rural and urban populations rose from 67.5% in 2016 to 78.4% in 2019, and households connected to electricity rose from 32.8% in 2016 to 37.7% in 2019. According to the REA Tanzania Mainland Energy Access and Use survey report, from 2019, banks and ATMs are 100% connected to electricity, mobile money agents are 99.7% connected to electricity, water wells using electric motors are 97.2% connected to electricity and shops are 88.5% connected.⁹

- Tanzania Development Vision 2025 (Tanzania Vision 2025)

Tanzania Development Vision 2025 is a long term development plan to transform Tanzania from a least developed country to a middle income country, and at the same time transform Tanzania from a low productivity agricultural economy to a semi-industrialized one by investing in boosting its competence and competitiveness.

Tanzania Vision 2025 invests in promoting Science and Technology Education as well as promoting Information and Communication Technologies (ICTs) to be at the center of its competitive social and economic transformation.¹⁰

⁷TCRA (2015), December Quarterly Communications Statistics – Accessed 25th December 2020

⁸TCRA (2020), September Quarterly Communications Statistics – Accessed 25th December 2020

⁹REA (2019), Tanzania Mainland Energy Access and Use Survey – Accessed 25th December 2020

¹⁰Tanzania Vision 2025, Tanzania Development Vision 2025 – Accessed 29th December 2020

- National ICT Infrastructure

In 2003, Tanzania migrated from an expensive and low capacity satellite bandwidth for local and international communication, to a high capacity broadband connection to the world. This connection was established in 2015 through the Eastern Africa Submarine Cable System (ESSAy), which has a capacity of 4.72tbps, the Southern and Eastern Communications Network(SEACOM) with capacity of 1.28 tbps, and coverage of 7,560 km long NICTBB Optic Fibre Cable with capacity of 4.8tbps.¹¹

With establishment of NICTBB and submarine cables, backhaul transport bandwidth cost had been cut by 99% in 2015, compared to the 2009 cost. To capitalize on its unique geographical position, Tanzania is serving neighbouring landlocked countries by extending the benefits of high-capacity submarine cables through the NICTBB infrastructure and fulfilling its aspirations of being a regional ICT hub in the process. The government of Tanzania has also deployed six Internet Exchange Points (IXPs) located in eastern, northern, central and southern parts of the country, and established a country code top-level domain (ccTLD).

Tanzania is the first east and southern African country to migrate completely to terrestrial digital broadcasting. It embarked on Analogue Switchoff (ASO) in 2012 and by June 2015 successfully implemented the ITU agreement goal.¹²

¹¹ TCRA (2016) National Information and Communications Technology Policy – Accessed 27 January 2021

¹² ICT Policy (2016), Tanzania National ICT Policy of 2016 – Accessed 29th December 2020

- Hubs and Labs

Hubs and innovation labs are ‘innovation intermediaries’ and accelerators of the innovation ecosystem, they bring together a broad range of actors to address a specific social or organisational challenge, often adopting new and experimental methods. Innovation intermediaries come in a variety of sizes and formats and can make use of a range of techniques.¹³ Hubs have an important role in the country as a forum to develop innovations from ideas, to startups and later on, successful business. According to the HDIF report of 2018, there are approximately 40 hubs and innovation labs Tanzania. More than half of the hubs are located in Dar es salaam.¹⁴ The biggest is the Buni hub, established in 2010 by the Commission of Science and Technology, which has a vision of driving science, technology and innovation for sustainable development in Tanzania. In general, about a third of the hubs have specific focus on ICT and industry criteria including agri business.

¹³ Innovation Management (2018), Urban innovation labs, hubs, coworking spaces... Which one to choose to boost your innovation? – Accessed 27th January 2021

¹⁴ HDIF (2018), Tanzanian Hubs and Innovation Spaces Mapping – Accessed 25th December 2020

2. Is there existing capacity related to data management in this country?

- There is evidence that there is a demand for data skills in Tanzania. Specifically, the demand for data management skills is growing each year within both public and private sectors. As a result of the ongoing digitization processes of enterprise data the amount of data generated is increasing exponentially and its management is becoming weighty. Thus, the technological and data skills-gap remains a crucial challenge for Tanzania. According to The Open University Tanzania, the observable data problems in Tanzania include the mismatch in reports retrieval and production,

time consumption in data processing, inaccurate data, ineffective data protection, lack of data management practice, and haphazard data management and preservation strategies¹⁵.

- To address challenges in data collection, management and use, the government established the East Africa Statistical Training Centre (EASTC) in 1994 to serve Tanzania and the East Africa member states.¹⁶ In addition, two universities in Tanzania have begun to offer data related courses at bachelor and masters level: The Open University of Tanzania ([Bachelor of Science in Data Management](#)) and University of Dar es Salaam ([Masters of Science in Data Science](#)). A few organisations consistently offer data related short courses such as [Tanzania Data Lab \(dLab\)](#) and partnership of [University of Dodoma and IBM](#).
- There are 50 approved Commission of Universities¹⁷ in the country in the year 2020 in which 19 colleges offer Information Technology degrees, according to Udahili portal.¹⁸ There are 57 colleges and vocational training centres that offer certificates and Diploma in Information Technology.¹⁹
- Major institutions dealing in data management
- [National Bureau of Statistics\(NBS\)](#)
 - [Tanzania National Data Archives](#)
 - [Tanzania Socio-Economic Database](#)
 - [Basic Statistics Portal](#)
- [National Internet Data Centre\(NIDC\)](#)

¹⁵ OUT , Open University of Tanzania Data Management Degree – Accessed 29th December 2020

¹⁶ EASTC (1994), East Africa Statistical Training Centre (EASTC) Act – Accessed 29th December 2020

¹⁷ Tanzania Commission of Universities (2020), List of Approved University Institutions in Tanzania – Accessed 29th December 2020

¹⁸ Udahili Portal (2020), Information Technology Colleges in Tanzania – Accessed 29th December 2020

¹⁹ Udahili Portal (2020), Information Technology Colleges in Tanzania – Accessed 29th December 2020

Wider political and technological trends

This section provides an overview of the wider political and technological landscape that may impact the collection, use and sharing of data.

3. Has there been any recent political volatility? Could this volatility be linked to land and borders, therefore potentially impact agriculture data collection and publication?

The Tanzania-Malawi border dispute started soon after Malawi independence from the British in 1964.²⁰ The dispute is rooted in the colonial era where different treaties were signed between the British and Germans as well as British and Portuguese, establishing borders between the two countries and siding the entire Lake Nyasa to Malawi²¹. Tanzania, using the international customary law of 1960s, claimed part of Lake Nyasa redrew the border²².

The dispute was publicly debated from 1964 to 1967, then disappeared from the public conversation until 2012, when it erupted again in mainstream media. The escalation started with newspaper articles on Malawi's exploration of oil and gas in Lake Nyasa and Tanzania's parliamentarians reacting to the exploration. The dispute was built up into rumours of potential war, dismissed by the Tanzanian government, and diplomatic mediation and dialogue was begun to defuse the tension between the two countries.²³

²⁰ James Mayall (1973), *The Malawi-Tanzania Boundary Dispute* – Accessed 31st December

²¹ Joe Mlenga (2013), *The Role of the Malawi Media in the Malawi-Tanzania Border Dispute* – Accessed 31st December

²² James Mayall (1973), *The Malawi-Tanzania Boundary Dispute* – Accessed 31st December

²³ Joe Mlenga (2013), *The Role of the Malawi Media in the Malawi-Tanzania Border Dispute* – Accessed 31st December

4. Is there ongoing political tension? Could this tension be linked to land and borders, and therefore potentially impact on agriculture data collection and publication?

- Land use conflicts in Tanzania, just like any other African country, have been a problem for decades, especially between pastoralists and farmers. According to the South African Institute of International Affairs, weak policy and institutional framework, climate change, corruption, lack of land-use plans, and large-scale farming have hugely contributed to the conflicts.²⁴
- There are several land conflicts in Tanzania, taking place in various parts of the country. There are conflicts between farmers and pastoralists, natives against foreign investors, and de facto landowners against squatters. Districts that have recently experienced land conflicts between farmers and pastoralist include Kilosa and Kilombero in Morogoro region, Kilindi and Handeni in Tanga region, Mbarali in Mbeya region²⁵, Kiteto and Hanang in Manyara region, and Longido in Arusha regions²⁶.
- Change of climate in areas like Kiteto and Longido have caused scarcity of key resources, leading to pastoralists invading farms to graze their crops and leading to conflict.²⁷ The worst of the recent conflicts occurred in Kilosa were in December 2000 when 38 farmers were killed, and again in 2008 when 8 people were killed, livestock stolen and several houses set on fire.²⁸

²⁴ SAIIA (2017), In Search of the Solution to Farmer-Pastoralists Conflicts in Tanzania – Accessed 2nd January

²⁵ Meckson Lorden Nzogela (2014), Land Conflicts Between Pastoralists and Farmers in Tanzania – Accessed 2nd January

²⁶ SAIIA (2017), In Search of the Solution to Farmer-Pastoralists Conflicts in Tanzania – Accessed 2nd January

²⁷ Jeanne Y. Coulibaly et al. (2015), What Climate Services do Farmers and Pastoralists Need in Tanzania – Accessed 2nd January

²⁸ SAIIA (2017), In Search of the Solution to Farmer-Pastoralists Conflicts in Tanzania – Accessed 2nd January

5. Has there been any technology recently introduced to the country that could affect the agricultural data landscape? Have any technologies been replaced, or made obsolete or undesirable?

- According to [Agrinfo](#), despite the fact that ‘agriculture is one of the leading sectors in Tanzania accounting for at least 24% of the GDP, 30% of total exports and 65% of raw materials for Tanzanian industries’, the sector is still behind in the use of modern technology to improve productivity in the country.²⁹ The majority of farmers rely on traditional farming methods, only 1.4% of smallholder households use motorized equipment. On average only 1.9% of a smallholders’ farmland is irrigated, although farming in Tanzania is highly dependent on rainfall, and has been affected by severe drought periods over the last decade. Only 16% of the households use fertilizers and 42% of households have access to improved seeds.³⁰
- At this time most digital technologies are still at pilot stage. The following are organisations that utilize technology to improve efficiency in agriculture sector:
 - [WeRobotics](#), [Tanzania Flying Labs](#) and [Agrinfo](#) have been using drone technology to gather high resolution field data in rural Tanzania for the NASA Harvest Consortium’s ‘Pre-Harvest loss for smallholder farmers’ initiative, in collaboration with the International Food Policy Research Institute (IFPRI) and University of Maryland. The data acquisition included two rounds of multispectral drone data and three rounds of ground truthing data, including data on farm boundaries, crop variety and harvest volumes.³¹

²⁹ Agrinfo(2018), About Agrinfo – Accessed 13th January, 2021

³⁰ FAO (2018), Small Family Farms Country Fact Sheet – Accessed 15th January, 2021

³¹ WeRobotics (2018), Pre-Harvest Loss for Smallholder Farmers – Accessed 13th January, 2021

- **AgriTechs** Company Limited is a Tanzania based company with a product known as Hydroponics. Hydroponics is a combination of soilless farming and Internet of Things technology which enables farming on small spaces, reduces water use, and offers remote and real time monitoring of the farm through mobile phone application.
- **Agriinfo** is an organisation that uses technology such as drones to collect and analyse data to help farmers make informed decisions.
- **Tanzania Flying Labs** is a drone company that trains locals how to fly drones and how to analyse data to make informed decisions across different sectors, including agriculture.
- Mobile Money technology has revolutionised the agriculture sector, a sector that employs 75% of the population. Nearly half of all adults in Tanzania are excluded from traditional banks. Mobile money addresses this gap by making financial services accessible and convenient. Initiatives like Tanzania's Tigo (supported by Telepin) have helped to increase access to financial services by 11% since 2006. In total there are six mobile money services across the country which are: TigoPesa (Tigo), Mpesa (Vodacom), Airtel Money (Airtel), Halopesa (Halotel), Z-Pesa (Zantel) and T-Pesa (TTCL).³²
- The government electronic payment gateway, introduced in 2017, has made it easier for people to pay the government for various services, for example land charges, without physically visiting the government office.³³

³² Telepin (2019), Fintech and farming: how mobile money impacts sub-Saharan agriculture – Accessed 16th January, 2021

³³ Daily News(2019), GePG Pushes Revenue Collection Up – Accessed 16th January, 2021

Data regulation and laws

This section understands the general policy context: The main data related laws, policies and regulators, the relationship between state governments, data licensing and intellectual property laws, and any insights into data rights, for example, individual rights to data, rights for data creators, rights for governments and rights for citizens.

6. To what extent is there an open data policy or strategy for this country, including open data or data access?

Tanzania announced its withdrawal from the Open Government Partnership (OGP) on June 29, 2017 to avoid splitting their energies between multiple initiatives with similar goals. The withdrawal letter indicates that Tanzania will remain committed to African Peer Review Mechanism (APRM) and continue to put in place various policies and initiatives to support open government across different sectors.³⁴ Kigoma Municipality participates in the OGP Local program (formerly known as OGP Subnational Pilot) and OGP will continue to provide technical support to the municipality and the civil society partners such as [Twaweza](#) to achieve their local open government goals.³⁵

- Open Data Policy

Tanzania developed an initial draft of an open data policy that was reviewed by stakeholders but has not yet been endorsed by the government.³⁶

- Open Data Portal

The Tanzania Open Data portal is no longer supported by the government as it was part of a project that has since concluded, but the government shares data for various sectors

³⁴ Embassy of the United Republic of Tanzania (2017), A letter from Dr. Agustine P. Mahiga the Minister for Foreign Affairs and East African Cooperation of the United Republic of Tanzania – Accessed 26th January, 2021

³⁵ Open Government Partnership(OGP)(2017) – Tanzania (Withdrawn) – Accessed 26th January, 2021

³⁶ OGP (2017), Tanzania (Withdrawn) – Accessed 14th January, 2021

via the **National Bureau of Statistics (NBS)** website, nbs.go.tz.³⁷ The Open Data Barometer report shows that Tanzania has improved in openness across sectors from position 67 in 2016 to 66 in 2017.³⁸

- The Statistics Act, [Cap 351 R.E 2019]
Tanzania's Parliament passed an amendment to its troubling **Statistics Act** following internal and external pressures, including from NGOs and CSOs and from the World Bank Tanzania, one of the biggest funders of NBS activities. The revised Act of 2019 removes a threat of prison for civil society groups that publish independent statistical information.³⁹
The revised act promotes data sharing and access in general.

7. Is the country a member of any international organisation, policies or frameworks that promote a specific type of data access, use and sharing?

Tanzania is a member of various international organizations, policies and frameworks. Some of the memberships include:

Tanzania is a co-chair of United Nations Inter-Agency and Expert Group on Sustainable Development Goals Indicators (IAEG-SDGs). IAEG-SDGs is a group of 46 countries tasked by the United Nations Statistics Commission to develop a global indicator framework for Goals and Targets for the 2030 Agenda, which was then adopted by the UN General Assembly on 6th July 2017. There are three working groups forming the IAEG-SDGs: Geospatial Information, SDMX and Measurement of Development Support.^{f40}

³⁷ NBS (2017), Tanzania National Bureau of Statistics – Accessed 14th January, 2021

³⁸ OGP (2017), Tanzania (Withdrawn) – Accessed 14th January, 2021

³⁹ Human Rights Watch,(2019), Tanzania Drops Threat of Prison Over Publishing Independent Statistics, Accessed 15th January, 2021; The United Republic of Tanzania (2019), The Statistics Act, [Cap 351 R.E 2019] – Accessed 15th January, 2021

⁴⁰ IAEG-SDGs (2015), Inter-Agency Expert Group on SDG Indicators – Accessed 15th January 2021

Tanzania implements a global Statistical Data and Metadata eXchange (SDMX) standard, which is an industrial and modern mechanism and process for exchanging statistical data and metadata sponsored by BIS, ECB, EUROSTAT, OECD, UN and the World Bank. The **National Bureau of Statistics (NBS)** is a custodian organization to implement SMDX in Tanzania.⁴¹

Tanzania is a member country of the Convention on Biological Diversity, implementing the Cartagena Protocol on biosafety on biological diversity, and the Nagoya Protocol on access to genetic resources and the fair equitable sharing of benefits arising from their utilization to the convention on biological diversity.⁴²

8. What data protection laws apply in this country?

Tanzania has several laws in relation to data protection:

- United Republic of Tanzania Constitution, Electronics and Postal Communications Act (EPOCA) 2010

Section 16 of the Tanzania Constitution stipulates that every person is entitled to the respect and protection of their residence and private communications.⁴³

- Banking and Financial Institutions Act (BAFIA) 2006

Section 48 of Banking and Financial Institutions Act of 2006 stipulates that every bank or financial institution shall not disclose any information relating to its customers and their affairs, except otherwise required by the law or practices and usages customary among bankers.⁴⁴

⁴¹ SDMX (), Statistical Data and Metadata eXchange – Accessed 15th January 2021

⁴² The Cartagena Protocol (2000), The Cartagena Protocol on Biosafety – Accessed 15th January 2021; The Nagoya Protocol (2010), The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Utilization to the Convention of Biodiversity – Accessed 15th January 2021

⁴³ Tanzania Constitution (1974), The United Republic of Tanzania Constitution – Accessed 4th January 2021

⁴⁴ Banking and Financial Act (2006), Tanzania Banking and Financial Institutions Act 2006 – Accessed 4th January 2021

- **CyberCrimes Act 2015**
Section 6 of the CyberCrime Act of 2015 states that a person shall not intentionally and unlawfully intercept non-public transmission, electromagnetic emission from a computing device, non-public computer system transmission and circumvent the protection measures implemented to prevent access to content of a non-public transmission.
- **Consumer Protection Regulation 2018**
Section 6 of the Consumer Protection Regulation of 2018 of EPOCA 2010 states that any electronic communication licensee collecting information on its customers is obligated to protect customer information against improper or accidental disclosure and transfer to any party except when permitted by any terms and conditions agreed with the customer.⁴⁵
- **Online Content Regulation 2020**
Sections 9, 12 and 17 of the Online Content Regulation of 2020 of EPOCA 2010 stipulates that any online content provider is obligated to ensure the online content is secure, safe and does not contravene any other written law; that online radio and TV shall adhere to among other things, journalism ethics and professionalism, copyright and intellectual property rights and regulations; and that any authority or person employed by the authority shall not disclose information received or obtained during the exercise of its powers or performing its duties.⁴⁶

⁴⁵ EPOCA (Consumer Protection) (2018), Tanzania Consumer Protection Regulation of 2018 of Electronics and Postal Communications Act 2010 – Accessed 4th January 2021

⁴⁶ EPOCA (Online Content) (2020), Tanzania Online Content Regulation of 2020 of Electronics and Communications Act 2010 – Accessed 4th January 2021

- **Statistics Act 2019**

Section 31 of revised Statistics Act of 2019 states that information related to individual return, report or abstract, survey answer or any computerized document shared during the data collection process shall not be published, admitted in evidence or shown to any other person not employed in execution of a duty, unless prior to consent in writing has been obtained from the individual.⁴⁷

⁴⁷ Statistics Act (2019), Tanzania Revised Statistics Act of 2019 – Accessed 4th January 2020

⁴⁸ Cyber Crime Act (2015), Tanzania CyberCrime Act of 2015 – Accessed 4th January 2021

9. What other laws apply in this country that might affect the use of data and agriculture data in particular?

- **CyberCrime Act**

In Section 16 of Cyber Crime Act of 2015, it is stated that any person who publishes information or data presented in a picture, text, symbol or any other form in a computer system, knowing such information or data is false, deceptive, misleading or inaccurate, shall be liable to a fine or imprisonment.⁴⁸

This affects the use of agriculture data as stakeholders from the private sector become hesitant in making their data available publicly in case they are not in line with approved government statistics. The National Bureau of Statistics (NBS) requires institutions to submit their findings before publishing for approval or involve NBS in the data collection process.

- **Statistics Act**

Sections 18 of the revised Statistics Act of 2019 states that the Statistician General shall have powers to commence, vary or discontinue the collection of official statistics conducted through census or surveys and no person, government institution, or agency shall authorize continuation or commencement of

the collection process with exception of approval from Statistician General.

Section 43, subsection 2 states that any person who is in possession of any official statistics which to his knowledge has been disclosed contravention of the act, publishes or communicates to any other person such information commits an offence and shall be liable to fine or imprisonment.⁴⁹

- Copyright Act

Sections 37, 38 and 42 of the Tanzania Copyrights and Neighbouring Rights Act of 1999 states that the person infringing copyrights is liable to payment of damages suffered as consequences of infringement, the injured party of copyright infringement may require destruction of copies that had been unlawfully manufactured or distributed or have been unlawfully intended for distribution, and any person who knowingly violates, or causes to be violated copyrights and rights protected under the Copyright Act shall be liable to fine, state.⁵⁰

10. To what degree are data protection laws, and other laws that might affect the use of agriculture data, devolved, for example, to regions, states and cities?

- Data protection law and intellectual property laws such as the constitution, CyberCrime Act, banking and financial institutions act (BAFIA), Copyrights Act and electronic and postal communications act (EPOCA) are the responsibility of a central government, especially its various institutions such as NBS outlined in revised Statistics Act of 2019⁵¹, BoT for Banking and Financial Institutions Act of 2006⁵², the Police for CyberCrime Act of 2015⁵³, and TCRA for CyberCrime Act of 2015⁵⁴ and EPOCA 2010.⁵⁵

⁴⁹ Statistics Act (2019), Tanzania Revised Statistics Act of 2019 – Accessed 4th January 2021

⁵⁰ Copyrights Act (1999), Tanzania Copyrights and Neighbouring Rights Act of 1999 – Accessed 16th January 2021

⁵¹ Statistics Act (2019), Tanzania Revised Statistics Act of 2019 – Accessed 4th January 2021

⁵² Banking and Financial Act (2006), Tanzania Banking and Financial Institutions Act 2006 – Accessed 4th January 2021

⁵³ Cyber Crime Act (2015), Tanzania CyberCrime Act of 2015 – Accessed 4th January 2021

⁵⁴ Cyber Crime Act (2015), Tanzania CyberCrime Act of 2015 – Accessed 4th January 2021

⁵⁵ EPOCA (Online Content) (2020), Tanzania Online Content Regulation of 2020 of Electronics and Communications Act 2010 – Accessed 4th January 2021

11. What organisations are responsible for enforcing data protection laws and other laws that might affect the use of agriculture data?

- All acts and regulations related to communications, telecommunications and broadcasting, like the Broadcasting Service Act, EPOCA and CyberCrime Act, are enforced by the **Tanzania Communications Regulatory Authority (TCRA)**.
- The CyberCrime Act, depending on the violation, is sometimes enforced by the **Tanzania Police Force**.
- The Statistics Act is enforced by **Tanzania National Bureau of Statistics (NBS)** and the **Office of the Chief Government Statistician (OCGS) Zanzibar**, as stated in the revised Statistics Act of 2019.⁵⁶
- The Banking and Financial Institutions Act is enforced by the **Bank of Tanzania (BoT)**.

⁵⁶ Statistics Act (2019), Tanzania Revised Statistics Act of 2019 – Accessed 4th January 2021

⁵⁷ Statistics Act (2019), Tanzania Revised Statistics Act of 2019 – Accessed 4th January 2021

⁵⁸ The Citizen (2020), New Plan Designed to Boost Agriculture Insurance Cover – Accessed 17th January 2021

12. To what extent are data protection laws and other laws that might affect the use of agriculture data enforced?

- In enforcing communications, telecommunications and broadcasting acts and regulations, the **Tanzania Communications Regulatory Authority (TCRA)** implements its obligations to the full extent of the law.
- In implementing CyberCrime Act, the **Tanzania Police Force** fully implements its obligations.
- The **Tanzania National Bureau of Statistics (NBS)**, due to funding and human resource challenges, implements its lawful obligations of Statistics Act of 2019 to a fair degree but not fully.⁵⁷
- The **Bank of Tanzania (BoT)** fully implements its lawful obligations in regard to the Banking and Financial Institutions Act of 2006.⁵⁸

Agriculture law

The next section gathers agriculture specific information – any agriculture specific context that would need to be considered for a project, identifying the main agriculture-related laws, policies and regulators that may impact on the access, use or sharing of data and information.

What types of laws exist in this country that affect agriculture more widely, and any specific area the investment is looking into, and what organisations are involved?

Major laws existing in the country affecting agriculture more widely are:

- Land Act Cap 114⁵⁹

This act is related to all issues of land ownership, land demarcations, land use transfers, and land disputes and conflicts resolutions. Organizations tasked to implement obligations stated in the act are the [Ministry of Lands Housing and Human Settlements \(MLHHS\)](#), and the [President's Office Regional Administration and Local Government Authority \(PO-RALG\)](#).

- Environment Management Act of 2004⁶⁰

The act ensures all activities conducted observe environment protection and conservation so as to avoid issues related to pollution, poisoning or erosion. Agriculture activities must ensure they protect and conserve the environment. The [National Environment Management Council \(NEMC\)](#) under the [Vice President's Office](#) enforces this law.

⁵⁹ Village Land Act (1999), Tanzania Village Land Act of 199 CAP 114 – Accessed 17th January 2021

⁶⁰ Environment Management Act (2004), The Environmental Management Act of 2004 – Accessed 17th January 2021

- Fertilizers Act of 2009⁶¹

This act deals with aspects of registration and issuance of licenses to fertilizers plants and dealers, and the manufacturing, importation, trading, inspection and sampling analysis of fertilizers and fertilizer supplements in the country. The act is enforced by the **Tanzania Fertilizer Regulatory Authority (TFRA)** under the **Ministry of Agriculture (MoA)**.

- Seeds Act 2003⁶²

This act deals with aspects of registration and issuance of licenses to seed dealers, and the importation, exportation and sales of seeds in the country. The act is enforced by the **Agricultural Seed Agency (ASA)** under the **Ministry of Agriculture (MoA)**.

- Business Registration Act of 2007⁶³

The act deals with the establishment of business registration centers, registration of businesses and business names, suspension, revocation, de-registration and cancelation of certificates of registration and inspection of businesses. The act is enforced by the **Business Registration and Licensing Agency (BRELA)** and the **Ministry of Industry and Trade (MIT)**.

- Banking and Financial Institutions Regulations of 2014⁶⁴

These regulations deal with licensing and assessment of banks and financial institutions, establishment of banking units and its subsidiaries, and the scope and authority of banks and financial institutions. This regulation affects the agriculture sector by the establishment, operation and monitoring of the agriculture bank and other financial services

⁶¹ Fertilizers Act (2009), *The Fertilizers Act of 2009* – Accessed 17th January 2021

⁶² Seeds Act (2003), *The Seeds Act of 2003* – Accessed 17th January 2021

⁶³ Registration Act of 2007 – Accessed 17th January 2021 Business Registration Act (2007), *The Business Activities Act of 2007* – Accessed 17th January 2021

⁶⁴ Bank and Financial Institutions Regulation (2014), *Banking and Financial Institutions (Licensing) Regulations of 2014* – Accessed 17th January 2021

that offer financial support and incentives to farmers and stakeholders taking part in agriculture activities. The regulation is enforced by the **Bank of Tanzania (BoT)**.

⁶⁵ SUA (n.d.), Sokoine University of Agriculture (SUA) – Accessed 17th January 2021

⁶⁶ VELMA LAW (2020), Fertilizers Act amendments proposed Tanzania 2020 – Accessed 17th January 2021

14. Are there any upcoming regulations that will affect agriculture and any specific area the investment is looking into?

- Agriculture and Insurance

The plan by the Tanzania Insurance Regulatory Authority (Tira), which runs from 2021 to 2025, intends to tweak the role of each player in agriculture insurance. The goal is to develop strategies on how different players, including the government, can raise their involvement in agriculture insurance. While the government will have to implement better infrastructure, such as irrigation farming systems, insurance companies will have to commit themselves to offering different affordable products that reach large populations.⁶⁵

- Fertilizers Act amendments

VELMA Law reports that ‘Written Laws (Miscellaneous Amendments) No 1 Bill 2020 has been presented to the Tanzanian Parliament in January 2020 and proposes the following changes to the **Fertilizers Act Cap 378**:⁶⁶

- ‘It is an offence for any person who sells fertilizer or fertilizer supplements above the indicative price.
- ‘The Minister may restrict or prohibit exportation or importation of fertilizer and fertilizer supplements for the purposes of promoting domestic production and sufficient distribution of fertilizer and fertilizer supplements within Tanzania.’

- COVID-19 Uncertainties

Across the world COVID-19 has impacted various areas of the economy, including agriculture productivity, weakening supply chains and increasing trade tensions.

The pandemic exerts political pressure that may consequently result in regulatory uncertainty.

⁶⁷ SUA (n.d.), Sokoine University of Agriculture (SUA) – Accessed 17th January 2021

⁶⁸ United Republic of Tanzania (2015), Agricultural Sector Development Strategy – II 2015/2016 – 2024/2025 Accessed 15th January 2021

15. At a high level, what are the respective roles of the public, private and third sector in the agriculture sector?

The following are the public sector institutions that contribute to the agriculture sector:

- The Ministry of Agriculture provides policy, laws and regulations, and benchmarks prices for various goods and services:<https://www.kilimo.go.tz/index.php/en/resources/category/regulations>
- The **Tanzania Meteorological Agency (TMA)** provides weather forecast specific for farmers.
- The National Bureau of Statistics, in collaboration with other partners, conducts an Annual Agriculture Survey to inform the sector, as discussed in Question 16 .
- The **Sokoine University of Agriculture (SUA)** is a partner of the Ministry of Agriculture, and has conducted training and research on agriculture since 1984. SUA also hosts **the African Seed Health Centre** and Virtual Centre known as ‘Southern African Centre for Infectious Disease Surveillance’.⁶⁷

The following are the private and non-state actors that contribute to the agriculture sector:

- Provide access to finance, technical support and market linkages to small scale farmers.⁶⁸
- The Agriculture Non State Actors Forum (ANSAF) conducts research on improving efficiency of agriculture and provides support to small scale farmers.
- International organisations like FAO and USAID provide grants to implement various projects in order to improve productivity.⁶⁹
- Telecommunication Companies provide access to information to farmers through mobile Apps like TigoKilimo⁷⁰.
- Telecommunication Companies provide mobile money services to farmers. In total there are 6 mobile money services across the country which are, TigoPesa(Tigo), Mpesa(Vodacom), Airtel Money(Airtel), Halopesa (Halotel), Z-Pesa (Zantel) and T-Pesa(TTCL).

⁶⁸ FAO (2017), Country Programming Framework of United Republic of Tanzania Accessed 15th January 2021; USAID (2021), Agriculture and Food Security) Accessed 15th January 2021

⁷⁰ GSMA (2015), Tigo Kilimo Impact Evaluation – Accessed 16th January, 2021

⁷¹ AASS (2016/17), Annual Agriculture Sample Survey Crop and Livestock Report 2016/17 – Accessed 17th January, 2021

⁷² Statistics Act (2019), Tanzania Revised Statistics Act of 2019 – Accessed 4th January 2020

16. Who is involved in or shapes the collection, use and sharing of agriculture data in this country?

The major stakeholder in the shaping, collection, use and sharing of agriculture data is the public sector. Government organizations include the National Bureau of Statistics (NBS), Ministry of Agriculture (MoA), Ministry of Livestock and Fisheries, Ministry of Industry and Trade (MIT), President's Office Regional Administration and Local Government Authority (PO-RALG), as stated in the Annual Agriculture Sample Survey (AASS) of 2016/17, a major agriculture survey done every five years.⁷¹

- The major role played by NBS is to coordinate, produce, supervise and disseminate official 'agriculture' statistics, as stated in section 6 of the revised Statistics Act of 2019.⁷²

- Other government institutions mentioned play a key role in data generation, collection and validation. Some of them are primary producers of the data, like **MoA, Ministry of Livestock and Fisheries** and **PO-RALG**, while others are primary users such as **MIT** as well as **NBS**.
- The private sector takes part in the generation of small sets of agriculture data, mostly related to the projects they invest in, for example **Southern Agricultural Growth Corridor of Tanzania (SAGCOT)** generates data for the clusters they are working on, **Ihemi** and **Mbarali**, and the '**value chains**' they take part in.
- Development partners mostly help both private sectors and the government in various stages of data production, collection, use and sharing, providing financial and technical support to some or all of these stages, so as to support the availability of agriculture data for decision-making. For example, the role played by **USAID** in financing the **AASS** of 2016/17.⁷³

⁷³ AASS (2016/17), Annual Agriculture Sample Survey Crop and Livestock Report 2016/17 – Accessed 17th January, 2021

17. Have there been any high profile failures or successes related to the collection, use and sharing of agriculture data?

Failures

- The major challenge regarding data collection, use and sharing was posed by the **Cybercrime Act of 2015**, which gave room to imprison individuals if they used or shared inaccurate statistics, as described under Question 9. Further, the **Statistical Act 2016** gave a power to the **Statistician General** to authorize commencement of the data collection process, and that no data collection process could commence until approved by the **Statistician General**. However, the revised **Statistical Act of 2019** removes the threat of prison for civil

society groups or individuals that publish independent statistical information, therefore better promoting data use and sharing. On the other hand, data collection process remains unaltered that the individual or organisation must seek approval from the Statistician General to perform data collection, and that the Statistician General has the right to reject the findings to be published if they find that the data collection or analysis is not in line with the set guidelines.⁷⁴

⁷⁴ The United Republic of Tanzania (2019), *The Statistics Act, [Cap 351 R.E 2019]* – Accessed 15th January, 2021

⁷⁵ TMA (2019), *Huduma Zetu* – Accessed 16th January, 2021

⁷⁶ GSMA (2015), *Tigo Kilimo Impact Evaluation* – Accessed 16th January, 2021

Successes

- The Tanzania Meteorological Agency (TMA) publishes weather forecast information (daily, monthly and per season) to the public through their [website](#). In addition, TMA has a news bulletin for farmers which is published every ten days and monthly. Farmers and other stakeholders can access the information through FarmSMS mobile app.⁷⁵
- Mobile Telecommunication Service Provider Tigo launched Tigo Kilimo in December 2012, with the objective of providing access to information for farmers. Tigo Kilimo is an agricultural value added service (Agri VAS) provided by mobile network operator, Tigo. The service offers information for farmers via mobile phone and can be accessed via four mobile channels: Unstructured Supplementary Service Data (USSD), push SMS subscription, Interactive Voice Response (IVR) and a helpline. Tigo Kilimo provides agronomic tips on ten major crops (maize, rice, Irish potato, cassava, onions, banana, citrus, sweet potato, tomato and cashew); market price information on these crops for main markets; and 1, 3, and 5 day weather forecasts available for 26 regions of the country. Tigo Kilimo had almost 400,000 registered users by 2014.⁷⁶

18. Are there any developments, pressures or opportunities not specific to the sector that may affect the collection, use and sharing of agriculture data, and any specific area the investment is looking into?

⁷⁷ Ministry of Agriculture (2018), Mfumo wa Kushughulikia Malalamiko Yatokanayo na Shughuli za Mradi – Accessed 17th January, 2021

Pressures

- The revised Statistical Act 2019 creates pressure on the data collection process by giving the power to the Statistician General to approve the process and reject the findings if not satisfied, as stated in Question 19.
- Land conflicts between pastoralists and farmers may pose challenges in data collection in the conflict zones.
- The COVID-19 pandemic creates uncertainty around several development efforts.

Opportunities

- The revised Statistical Act 2019 now no longer actively discourages data sharing and use, having removed imprisonment charges to those sharing inaccurate statistics.
- The pace of growth of mobile network internet across the country as discussed in Question 1 provides a brighter future for investment in data sharing via digital means.
- USSD technology provides a means to communicate with farmers in areas with unstable internet connectivity or with those who use feature phones.
- The government, through the Ministry of Agriculture, hosts a system to address complaints related to ongoing agriculture projects.⁷⁷

Related grants

This section provides an overview of previous initiatives in the country and any lessons learned. Useful sources of information include the [Agricultural Development](#) team at the foundation and grantees.

⁷⁸ FAO (2017), Country Programming Framework of United Republic of Tanzania – Accessed 15th January 2021

19. Are there any other grants within the portfolio that are funded in this location?

I. Food and Agriculture Organization of United Nations (FAO)

The United Nations, through the FAO, provided grants to support the following government areas through its Country Programming Framework of United Republic of Tanzania:⁷⁸

- Government priority A: Evidence-based agriculture policy, planning, investment and sector coordination.
- Government priority B: Increasing agricultural production, productivity for food and nutrition security.
- Government priority C: Improving market access for increased incomes.
- Government priority D: Strengthening resilience to natural and man-made threats and crises, such as climate change impacts; and unsustainable management of natural resources.

II. Bill & Melinda Gates Foundation

Since 2007 the foundation has been funding various value-chain initiatives in the agriculture sector in Tanzania. The current focus is to offer evidence and capacity support that will enable the government to take a nutrition- and gender-sensitive, market-led approach to sector development, increase resource allocation to the sector, and improve the policy

environment. This will allow the private sector to thrive by driving system-level change, working with government and non government institutions to support implementation of Agriculture Sector Development Plan II. Empowering and integrating women into the economy was found to be critical in slowing the high population growth and improving nutritional outcomes. Going forward, the goal is to support the ministry of Agriculture to coordinate and drive the reform of the seed system and investments in livestock in Tanzania.⁷⁹

⁷⁹ USAID (2021), *Agriculture and Food Security* – Accessed 15th January 2021

⁸⁰ Gates Foundation(n.d.), *Agricultural Development (Strategy Overview)* – Accessed 15th January 2021

III. Other Research Grants under Sokoine University of Agriculture

20. Are there any insights into what has worked or not worked in the past, including any previous projects?

Lessons from Feed The Future

Challenges⁸⁰

- Limited access to productive and financial resources, weak infrastructure, and poor policies reduce incentives to develop the agriculture sector.
- Private-sector investment in agriculture is constrained by limited access to long-term capital, low levels of capacity and business skills, and policies which discourage growth.
- Climate change poses significant risks of prolonged drought and unpredictable weather, threatening the livelihoods of subsistence farmers.
- Rapid population growth and agricultural expansion pose a threat to Tanzania's natural resources that, when managed effectively, support livelihoods and agriculture.

Impact⁸¹

- Improvements in agriculture: Over 190,000 hectares of land are now under improved technologies/agriculture practices.
- Productivity gains: Productivity of rice per acre for participating farmers has nearly doubled.
- Sector-wide gains: At least 450,000 people have benefited from Feed the Future value chain interventions.

⁸¹ USAID (2021), *Agriculture and Food Security* – Accessed 15th January 2021

⁸² FAO (2017), *Country Programming Framework of United Republic of Tanzania* – Accessed 15th January 2021

Food and Agriculture Organisations of United Nations(FAO)

Challenges as outlined on [FAO Country Programming Framework of United Republic of Tanzania](#)⁸²

- Extreme weather events such as droughts and floods due to climate change, pests, and disease outbreaks continue to pose a threat to food security in the country. It is reported that the effect will be more acute to vulnerable groups and those operating in fragile ecosystems such as the agro-pastoralists and forest-dependent communities.
- Unsustainable management of natural resources and environmental degradation continue to pose serious threats to the livelihoods of rural and urban populations. This has exacerbated resource-use conflicts, currently gripping the country.

Summary of Agricultural Sector Constraints as outlined by [Agricultural Sector Development Strategy – II 2015/2016 – 2024/2025](#)⁸³:

⁸³ United Republic of Tanzania (2015), Agricultural Sector Development Strategy – II 2015/2016 – 2024/2025 – Accessed 15th January 2021

- Inadequate policy environment and uneven policy implementation for achieving sustained and inclusive agricultural growth targets.
- Low productivity levels and growth trends, including inadequate and sustainable access to key inputs (especially fertilizers and seeds, animal AI and fingerlings).
- Weak delivery of agricultural services (for crops, livestock, fisheries), coupled by inadequate public and private resources.
- Inadequate and lack of prioritized and quality public investments, and low private sector investments, reflecting the early stages of private sector development. This includes inadequate rural infrastructure (for example, irrigation, rural roads, storage facilities and rural energy).
- Constraints to efficient and competitive agricultural marketing, including limited value-chain development.
- Limited access to sustainable rural finance.
- Low capacity to respond to climate change challenges.
- Low institutional and human resource capacity and inadequate coordination among diverse stakeholders, at national and local levels, including a weak agricultural statistical system.

21. Are there any current grants in this location, co-funded or funded outside of the foundation ?

- Partnerships for Enhanced Engagement in Research (PEER) programme

PEER is an international grants program that funds scientists and engineers in developing countries who collaborate with U.S. government-funded researchers to address global development challenges. The program is supported by USAID and is implemented by the U.S. National Academies of Sciences, Engineering, and Medicine (referred to as the National Academies).⁸⁴ The following are two projects in SUA supported by PEER:

- Morogoro Youth Empowerment through the Establishment of Social Innovation (YEESI) lab for problem-centered training in machine vision. The project aims to increase awareness among the youth of Morogoro and nearby regions to address machine vision problems in agriculture.⁸⁵
- Assessment of land-cover and land-use change, drivers and potential effects to megaherbivores at Ruaha-Rungwa and Tarangire-Manyara Wildlife ecosystems in Tanzania. The aim of this project is to understand the nature and extent of land-cover and land-use change (LCLUC) in and adjacent to the Ruaha-Rungwa and Tarangire-Manyara ecosystems, that might be detrimental to wildlife and human wellbeing over the past 40 years (1980-2019), in order to guide management decisions and policy making.⁸⁶

⁸⁴ SUA (2021), Sokoine University of Agriculture wins two projects from PEER program – Accessed 17th January 2021

⁸⁵ PEER (2021), Morogoro youth empowerment through establishment of social innovation (YEESI) lab for problem-centered training in machine vision Accessed 15th January 2021

⁸⁶ PEER (2021), Assessment of land-cover/land-use change, drivers and potential effects to megaherbivores at Ruaha-Rungwa and Tarangire-Manyara Wildlife ecosystems in Tanzania Accessed 17th January 2021

- Feed the Future

Feed the Future is the United States Government's global hunger and food security initiative, and supports plans to reduce poverty and improve nutrition. Feed the Future in Tanzania makes targeted investments emphasizing private sector development to ensure long-term sustainability of poverty reduction and nutrition goals. These investments help smallholder farmers to be more competitive in producing and marketing staple foods like rice and maize, increase production of horticulture products (vegetables and fruits), and construct rural feeder roads to improve farmers' access to markets.⁸⁷

⁸⁷ USAID (2021), Agriculture and Food Security) – Accessed 15th January 2021

Resources

Useful places to use when updating the country profile.

- Policies in the United Republic of Tanzania: <https://extranet.who.int/nutrition/gina/en/policies/1564>
- Tanzania Agriculture Regulations <https://www.kilimo.go.tz/index.php/en/resources/category/regulations/P20> ; [kilimo.go.tz/index.php/en/resources/category/regulations](https://www.kilimo.go.tz/index.php/en/resources/category/regulations)
- Tanzania Agricultural Research Institute Act, 2016 (No. 10 of 2016) <http://extwprlegs1.fao.org/docs/pdf/tan162774.pdf>
- Climate-smart Agriculture Guidelines for the United Republic of Tanzania <http://www.fao.org/publications/card/en/c/a8e1375c-d623-4acf-9930-8dc9a862065e/>
- Country Programming Framework For United Republic of Tanzania <http://www.fao.org/3/a-bt133e.pdf>

- The United Republic of Tanzania Resilience Strategy 2019–2022
<http://www.fao.org/3/ca4805en/ca4805en.pdf>
- Open Data Barometer
<https://opendatabarometer.org/>
- World Bank Indicators
<https://data.worldbank.org/>
- World Bank country pages
<https://www.worldbank.org/en/where-we-work>
- Internet World Stats
<https://www.internetworldstats.com/stats.htm>
- DLA Piper Data Protection Laws of the World
<https://www.dlapiperdataprotection.com/index.html>
- Network readiness index
<https://networkreadinessindex.org/>
- Data guidance <https://www.dataguidance.com/>
- WIPO IP Portal <https://ipportal.wipo.int/>
- State of Open Humanitarian Data report
<https://centre.humdata.org/wp-content/uploads/2020/01/StateofData2020.pdf>
- UNESCO Institute for Statistics: How much does your country invest in R&D?
<http://uis.unesco.org/apps/visualisations/research-and-development-spending/>

Data Sharing Toolkit



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