

Policy Brief

National Agricultural Data Infrastructure: Malawi

Summary

Data could be the conduit for boosting intra-Commonwealth trade and investment as enshrined in the 'Declaration on the Commonwealth Connectivity Agenda for Trade and Investment'.¹ The sharing of data according to the Open Data Institute (ODI), can create social and economic value for people, organisations, and the wider economy.² Ensuring data sovereignty including maintaining a secure, trusted data environment, governments have an important role to play in laying the foundations for a flourishing data-driven economy by pursuing policies that improve the flow of data and ensuring that companies who want to innovate have appropriate access to high-quality and well-maintained data.³

In its quest to achieve Malawi 2063 objectives, the country must adopt inclusive digitalisation processes across all sectors. Digital agriculture innovations, technologies and services rely on a robust agricultural data infrastructure and good agricultural data management practices. Quality data provide the basis for digital advisory services to farmers, provide the basis for policy decision-making and inform investment decisions by investors. Although several organisations

are already engaged in agricultural data management, a dialogue with national stakeholders confirmed the existence of fragmented databases, an unwillingness to share data, operational inefficiencies, data collection fatigue, unsuited policies and a data power imbalance. There is a lack of co-ordination for managing agricultural data as an important resource in the country.

With the advent of the Data Protection Act (DPA), currently awaiting Presidential Assent, the Ministry of Agriculture is expected to soon develop its own set of regulations for compliance with this Act. Therefore, there is an opportunity to launch the design of a National Agricultural Data Infrastructure (NAGDI), a concept being developed by the Commonwealth Secretariat and discussed at the dialogue.

National stakeholders present at the dialogue made recommendations on how to put in place an enabling environment for collaborative interventions among institutions engaged in agricultural data management so they can design, establish and start the implementation of a Malawi NAGDI.

Commonwealth advocacy on NAgDI: Countries with robust public infrastructure are better equipped to meet the needs of their people and accelerate action towards the United Nations Sustainable Development Goals. From the Commonwealth's perspective, NAgDI across the countries creates a broad interoperable data system that can act as a backbone to inform advisory decisions, policy decisions, and trade and investment decisions between countries.

What is the issue?

With the adoption of Malawi 2063, the country has set itself the goal of rapidly improving on its current 20.2 percent internet penetration rate and bridging the digital gap in the country. The country has used the United Nations Development Programme's Inclusive Whole-of-Society Digital Transformation Framework as a guide and support to the National Registration Bureau, with the result that more than 10 million Malawians above the age of 16 have already been registered under the National Registration & Identification System (NRIS). This establishes a foundation on which a digital public infrastructure for agricultural data can be built. With the upcoming DPA currently awaiting Presidential Assent, there is an opportunity for the agriculture sector to embrace the inclusive nature of the above digital initiatives for the empowerment of the agricultural community in Malawi.

However, one of the overarching challenges to digitalisation in the agriculture sector is the lack

of a co-ordinating entity to bring all stakeholders together for better data management in the country. This was one of the conclusions of the multi-stakeholder dialogue, convened by the Commonwealth Secretariat and hosted by the Government of Malawi, in collaboration with AGRA and with financial support from the Open Society Foundations, held on 26–28 September 2023. Nevertheless, the dialogue on the establishment of a NAgDI also uncovered strong potential for embarking on such an initiative.



The consultations identified several stakeholder groups within the national agricultural ecosystem in Malawi that are already actively involved in the management of agricultural data (data generation, aggregation, processing, analysis, sharing, use).

Why is this important?

In general, lack of reliable and trusted data on agriculture and agribusiness renders a country risky for investors. Lack of trusted data, often resulting from duplications of data systems, with different entities reporting multiple figures on a single data point, can hinder private sector investment in the sector, which will deprive the economy of opportunities for steady growth, resulting in increased food insecurity, poverty and hunger.

There is currently poor co-ordination in the management of agricultural data, such as unique identifiers of farmers, traders, agribusinesses and other entities within the ecosystem (*user data*) and data on the substance for the entities, such as production data, agronomic data, weather data, financial data, soil data, transactional data (*content data*). This lack of co-ordination has led to fragmented databases, unwillingness of data-holders to share data, further duplication of data systems, operational inefficiencies, data collection fatigue on data subjects, failure to scale innovations based on data, unsuited policies being made based on these fragmented data points and a data power imbalance between the data-owners and the data-holders.

The dialogue mentioned above was structured based on the Digital Agriculture Framework⁴ and the Digital Fisheries Framework⁵ produced by the Commonwealth Secretariat. Pillar 2 of these frameworks deal with Data Infrastructure. In general, infrastructure powers societies, provides fundamental services and systems that enable economies to function, allows for communication, facilitates the creation and growth of other systems and supports daily activities. For example, shared public infrastructure such as roads, railways, telecommunication networks or power lines serve as the fundamental building blocks that allow other innovations to thrive. Similarly, agricultural data management at a country level needs a model of digital public infrastructure (DPI) to power new innovations within the sector. This is what forms the foundation for the concept of the NAgDI as a model of DPI for agricultural data implementation in Commonwealth countries.

What should policy-makers do?

The NAgDI is likened to any national public infrastructure, such as rails or roads. A well-operating national rail infrastructure has policies guiding its use; backbone technologies supporting multiple users; a business model to ensure maintenance and sustainability of the infrastructure; and an entity that uses the policies, the technologies and the business model to manage the infrastructure. As a result, the design and implementation of the Commonwealth NAgDI has been conceptualised to cover four components: (i) data principles and policies to guide the NAgDI; (ii) data systems and technologies as the backbone for the NAgDI; (iii) a marketing and business plan for the NAgDI; and (iv) governance and administration of the NAgDI.



The dialogue shared background knowledge of these concepts with the institutions represented, provided the opportunity for stakeholders to appreciate the existing digital assets in the country and enabled an informed assessment of the challenges and gaps. The outcome of the dialogue comprised recommendations generated by the participants themselves, on each of these components, generally related to the enabling environment to facilitate the establishment of the NAgDI; the development of regulations and awareness to support collaborative interventions among stakeholder groups; building on existing components and integrating them into the NAgDI; and addressing some gaps through capacity development and co-operation with complementary sectors.

Stakeholders at the dialogue identified important roles for the Office of President and Cabinet, the Ministry of Agriculture, the National Statistical Office, the e-Government Department, the Donor Committee on Agriculture and Food Security,

the Non-Governmental Organisation Regulatory Authority, the Malawi Chamber of Commerce and Industry, academia, farmer organisations and civil society, among others.



Priority recommendations address two key processes: the design of the NAgDI in Malawi and initiating its development, as follows:

A: Steps to design the NAgDI:

1. **Continued capacity-building and advocacy:** Build a broader consensus on the policy issue and continue with follow-up conversations, dialogues, debates, etc. with national stakeholders in Malawi as well as and international development partners.
2. **Consolidate existing data and digital assets:** Undertake comprehensive identification and documentation of existing data/digital assets across the country, building on what was documented during the consultations, to form the foundation for the national data infrastructure.
3. **Mobilise resources:** Build on the partners identified during the national dialogue by developing a public and private partnership for resource mobilisation in support of the NAgDI.

B: Steps to begin the development of the NAgDI by taking advantage of low-hanging fruit:

4. **Develop a national data policy for agriculture:** Develop a clear data policy/plan/strategy for the agriculture sector with reference to the NAgDI for managing agricultural data in Malawi.
5. **Build a functional user ID system for agriculture:** Support the National Registration Bureau to complete the National Registration

and Identification System, upon which a functional user ID system can be built. This user ID system would not be limited to farmers but extended to all key entities within the agricultural innovation system.

6. **Build a farm ID system:** Co-ordinate the identification and mapping of all farmlands through a nationally accepted ID/polygon system for every field.
7. **Identify and build a data technology/system for the NAgDI:** Identify and agree on a backbone digital technology for harmonising existing data systems in the country, considering the outcomes of the national dialogue.
8. **Agree on the governance/administration option for the NAgDI:** Agree on a governance model that meets the needs of both public and private sector players for managing the national infrastructure for agricultural data.
9. **Develop a market/business model for the NAgDI:** Design and test a viable business model, including initial financing and subsequent investments, to enable the infrastructure to be built, adopted and used with its sustainability ensured.

To facilitate actions on these issues, participants identified some key institutions in Malawi that could play a leadership role on the design and development of the infrastructure:

For the data policy and principles: the Ministry of Agriculture, the Ministry of Justice, the Office of President and Cabinet (OPC), the Eastern African Grain Council (EAGC), Malawi Confederation of Chambers of Commerce and Industry (MCCCI), the National Statistical Office (NSO), the Civil Society Agriculture Network (CISANET), the Malawi Communications Regulatory Authority (MACRA).

For the data technologies and systems: the e-Government Department, the Ministry of Agriculture, the National Statistical Office (NSO), the Malawi Communications Regulatory Authority (MACRA), the ICT Association of Malawi (ICTAM), the Tony Blair Institute of Global Change (TBI).

For marketing and business planning: the Ministry of Agriculture, the Reserve Bank of Malawi, farmer group representatives, Telekom Networks Malawi plc, Airtel Africa plc, AGRA.

For governance and administration: the Donor Committee on Agriculture and Food Security (DCAFS), the Non-Governmental Organisation Regulatory Authority (NGORA), Malawi Confederation of Chambers of Commerce and Industry (MCCCI), the National Statistical Office (NSO), the National Planning Commission (NPC).

References

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Government of Malawi (2023) 'National Data Protection Bill'.

National Planning Commission (2021) 'Malawi 2063–MW2063'. <https://npc.mw/2021/01/mw2063/>

Endnotes

¹ The Commonwealth (2018). Declaration on the Commonwealth Connectivity Agenda

for Trade and Investment, 2018. <https://thecommonwealth.org/connectivity-agenda>

² The ODI (2023). Understanding the social and economic value of sharing data. <https://theodi.org/insights/reports/understanding-the-social-and-economic-value-of-sharing-data-report/>

³ HM Treasury (2018). The economic value of data: discussion paper.

⁴ Commonwealth Secretariat (2022). The State of Digital Agriculture in the Commonwealth. A Baseline Report: 2022. <https://state-digitalagriculture.thecommonwealth.org/digital-agriculture/introduction>

⁵ Commonwealth Secretariat (2023). The State of Digital Fisheries in the Commonwealth. A Baseline Report: 2023. <https://state-digitalfisheries.thecommonwealth.org/digital-fisheries/introduction>

About the series: These *Policy Briefs* are the result of multi-stakeholder dialogues hosted by governments in selected countries and jointly organised by the Commonwealth Secretariat, acting as an honest broker to bring actors together to design and develop a National Agricultural Data Infrastructure (NAgDI) to facilitate decision making on climate-related issues. These dialogues, involving relevant national stakeholders, are possible through financial support from the Open Society Foundations and collaboration with organisations such as AGRA in the case of Malawi.

For more information on this series, please visit <https://thecommonwealth.org/connectivity-agenda>



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