A Concept Note - Draft

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Multi-Stakeholder National Dialogue in Malawi

on

Data Infrastructure for Climate Decision Making

Led by

The Commonwealth Secretariat

In Partnership with

With financial support from

The Open Society Foundations (OSF)

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1.0 Background

1.1 Climate Data for Agriculture

For every country, **climate data** for agriculture can be considered as a national resource just as oil and gold. The value and quality of digital climate advisory services (DCAS) for agricultural stakeholders depend on the data behind the services, thereby making data the bedrock of digital agriculture innovations. Agricultural data, including climate data can be classified into two main groups. Firstly, data that conveys essence, substance, information, or intelligence in either its unprocessed or processed form can be referred to as **content data.** Examples include *soil maps, agronomic data, weather data, financial data, production data, yield data, market data, etc.* Secondly, any data or different pieces of data which, when brought together, can lead to the identification of a particular person or entity across the agricultural value chain can be referred to as **user data.** Examples include *data on farmers, traders, enterprises, consumers, research networks, extension networks, financial institutions, cooperatives, etc.* within the ecosystem.

1.2 Data Management

To ensure equitable access and use of information services, data management processes (acquisition, aggregation, storage, processing, analysis, and sharing) become necessary, especially in the context of food systems transformation. Digitisation, the conversion of analogue data into a digital format, is the first step towards the management of data, and the rapid development and adoption of digital technologies are enabling the digitisation process in new ways, and in ever-increasing volumes. Remote sensing tools, Internet of Things (IoTs), and mobile technologies are aiding fast, timely, accurate, multiple, and large data capture, aggregation, storage, processing, analysis, and exchange for use and re-use. Digitisation is a pre-condition and a step towards digitalisation[1] of agriculture as data becomes more accessible digitally.

2.0 The Data Challenge

Within any typical national data ecosystem, several stakeholder organisations (which can be governmental, private, cooperatives & associations or other collectives) are involved in the management of the two types of data mentioned above. Unfortunately, in most countries, there is absence of a national approach for managing data, especially on how to make content data available without compromising user data. This leads to the deployment of multiple data management systems and approaches by the various organisations, as separate datasets, based on the same national data. Furthermore, the unwillingness of the data holders to share their data leads to duplicates data systems resulting in operational inefficiencies, data collection fatigue on data subjects, failure to scale innovations, unsuited policies being made based on these fragmented data points, and data power imbalance between the data owners and data holders. Notwithstanding the potential ceding of enormous individual and national revenue to be realised from data, the long-term policy implication of the absence of national approach to data management will be a weak national digital sovereignty - the power and authority of a national government to make free decisions affecting citizens and businesses within the digital domain (Gawen et al., 2021).

In view of the above, the Commonwealth Secretariat's team has been coordinating with stakeholders including development partners, donors, private sector partners, digital solution providers, among others since 2021 to coordinate efforts to ensure sustainable impacts of digitalisation on vulnerable communities.

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[1] *Digitalisation of agriculture consists of digital innovations, data infrastructure, business development services and the enabling environment for digitalisation of agriculture - https://state-digitalagriculture.thecommonwealth.org/digital-agriculture/introduction*

3.0 Policy Proposal for Consideration

3.1 National Data Infrastructure (NDI)

Infrastructure in general powers societies, provides fundamental services and systems that enable economies, allows for communication, facilitates the creation and growth of other systems, and supports daily activities. All shared public infrastructure such as roads, railways, telecommunication networks, or power lines, serve as the fundamental building blocks that allow other innovations to thrive. 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 (UNDP, 2022). Just as all resources require infrastructure to exploit, data as a national resource also requires infrastructure to be managed. Climate data for agriculture at country level needs national infrastructure to fully harness or tap into this resource. A typical National Data Infrastructure (NDI) for managing climate data for agriculture, for example, may consist of options for data principles such as data registries, data identifiers, data standards, data provenance, data privacy and protection, data ethics, data use and re-use; frontier data systems and technologies to keep up-to-date and accurate data; honest brokering institutions for administering and governing the infrastructure on behalf of data owners; and a business model on how the infrastructure is maintained, scaled and sustained[2]. This is proposed model can be aligned with the concept of digital public infrastructure (DPI).

3.2 Digital Public Infrastructure (DPI)

In an analysis of 178 programmes in 85 countries, the World Bank[3] found that countries that had invested in foundational digital systems such as databases, ID systems, and payments platforms prior to the pandemic, were better able to implement social assistance programmes in response to COVID-19 and to reach more beneficiaries. DPI is considered as digital solutions that enable basic functions essential for public and private service delivery, i.e., collaboration, commerce, and governance. DPIs may be considered as the rails upon which data, just as energy powers society. DPIs within the agricultural sector should be seen more than just a technological platform by acting as the "rail" upon which private and public sector stakeholders can build applications, products and services that benefit the value chain actors. National DPIs should allow seamless data flow while accomplishing basic, but widely useful functions at a societal scale. India is one of the Champions of DPI with examples around national IDs, payment interface, and data exchange (see a recent joint statement by Indian Prime Minister and United States President on DPI (para. 39)[4].

4.0 DPI for Climate and Agriculture Data

In line with policy proposal discussed earlier, the Commonwealth is starting an initiative on the current status of DPI and policy solutions. The goal is to stimulate demands for DPI for agricultural data as the bedrock for digital climate advisory services by national governments to address climate change. The Commonwealth Secretariat is leading partners from the public and private sector to explore DPI for agricultural sector through national agricultural data infrastructure across the Commonwealth and beyond. The Commonwealth Connectivity Agenda for Trade and Investment (CCA) is a flagship programme within the Secretariat that promotes digital trade across the Commonwealth. The agricultural and fisheries sectors are chosen as one of the five pillars of CCA to operationalise digital trade

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[2] *Pillar 2 of the Digital Agriculture Framework in the State of Digital Agriculture in the Commonwealth: A Baseline Report 2022-* https://state-digitalagriculture.thecommonwealth.org/digital-agriculture/introduction

[3] *The Role of Digital in the COVID-19 Social Assistance Response* - https://socialprotection.org/discover/publications/role-digital-covid-19-social-assistance-response

[4] *Joint Statement from the United States and India, June 23, 2023* - https://www.whitehouse.gov/briefing-room/statements-releases/2023/06/22/joint-statement-from-the-united-states-and-india/

across the Commonwealth. And for this reason, agricultural data flow/exchange is critical for policy decision making to enable intra-Commonwealth trade and investment. The Secretariat has begun playing the role of an ecosystem coordinator through bilateral engagement with key actors, convening policy makers on the subject, and by producing knowledge products to guide the interventions. Some of the knowledge products can be accessed directly through the programme portal[5].

Below are the components of a typical national DPI for agricultural data that partners can engage in:

4.1 Developing and agreeing on the guiding principles for agricultural data.

The first step may take the form of collating existing data management rules and regulations within the countries and/or developing new ones to guide the design and operation of the infrastructure. It may also comprise consultations on the ways and means of use of data by the sector operators. This social component provides data principles for governance such as data standards, provenance, privacy and protection, ethics, data sharing, use and re-use.

4.2 Identifying appropriate data system as the backbone of the infrastructure.

The second step will be to explore the viability of technological or data system for interoperability across data systems within the countries. Such analysis will also enable a comparison of the contexts of countries in the Commonwealth (and beyond) to determine the feasibility of a common approach across Commonwealth Member States. This component will feature agricultural data registries, data identifiers, etc. for up-to-date data, accurate data products, and by adhering to the data principles under first component.

4.3 Exploring models for managing the data and the infrastructure.

This component will explore models for managing and administering the infrastructure and its content (the data), especially by making content data accessible without necessarily requiring access to user data. Critical features for this component will include independency, neutrality, and multi-stakeholder approach that acts as a **trustee/custodian/steward** to make decisions on behalf of the "data contributors/holders/owners". The issue of accountability and transparency of data management processes towards the latter will be of critical importance.

4.4 Exploring the business model around the infrastructure.

The fourth component will start addressing the issue of who pays for the initial financing of the infrastructure and how will the infrastructure be sustained and maintained. This includes tapping into the value to be created by the established infrastructure, the services to be derived, the recognition of the contribution of the data holders/owners, the incremental value of combining otherwise scattered datasets, to the society. The "public" in the digital public infrastructure does not mean the infrastructure will be freely accessible. The role of the national governments, farmers, agribusinesses, international development partners, donors, foundations, investors, etc. will be explored.

4.5 Creating awareness and building capacity.

This component lays the foundation for engagement around the above four components by creating awareness on the need for national agricultural data infrastructure and establishing the evidence for future loss of revenue from data by citizens and businesses in the country as well as the future risks of data that comes with inactions at national level. This involves

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[5] *CCA Resources and Reports - https://cca-resources.thecommonwealth.org/cca-resources/#block-c91b5cb7-d547-48aa-ab70-a3dc566778e0*

a multi-stakeholder approach to national dialogues on the issue by engaging all identifiable stakeholder groups involved in the food systems transformation processes at country level. Following initial awareness, an accompanying capacity building approach may be required as stakeholders engage with each of the aspects of the above components.

5.0 Multi-Stakeholder National Dialogue

To support countries design and build their national DPIs for agricultural data, the Commonwealth Secretariat is facilitating multi-stakeholder national dialogues in Commonwealth countries and regions to stimulate demand for the infrastructure. At the end of this process in each country, partners will be encouraged to explore the four components above to design and implement their DPIs, considering the need for interoperability across the Commonwealth to facilitate data sharing. With the financial support from the Open Society Foundations (OSF), and in collaboration with other partners, the Secretariat will begin these national dialogues with **Malawi, Ghana, Barbados,** and **Bangladesh** focusing on **climate data** for food systems transformation.

5.1 The Case of Malawi

Agriculture accounts for 30 percent of Malawi's Gross Domestic Product (GDP) and is important to the livelihoods of more than 90 percent of the population. The sector had significant growth in recent years, reaching the six percent growth rate target set forth by the Comprehensive Africa Agriculture Development Programme (CAADP), to which Malawi is a signatory[6]. Agricultural productivity is low across the country with low inorganic fertilizer use and poor access to agricultural tools leading to low production of high-value export crops. Eighty percent of people in Malawi depend on rain-fed agriculture, making the sector very vulnerable to climate change. Agricultural and climate data, as outlined above is critical for decision making to address the issues of production and market. As a result, addressing data coordination challenges will benefit the Ministries of Agriculture, Climate, Trade, etc. and other agricultural stakeholders in the country, and the Commonwealth. Among these benefits are.

1. Quality agricultural data for precision advisory services for producers to cushion them against the climate crisis leading to increase productivity.
2. Reductions in cost of data collection allowing the private sector digital innovators to provide more affordable digital services to value chain actors.
3. Increased revenue for producers because of the willingness of consumers to pay more due to traceability of the final products.
4. Big data and analytics, insights, and intelligence for intra-Commonwealth trade.
5. Future opportunity for governments, institutions, and individual citizens to generate revenue from their national resource – agricultural data.
6. Strong national digital sovereignty, the power and authority of national governments to make free decisions affecting citizens and businesses within the digital domain.
7. National and regional policy actions through the presence of interoperable DPIs across the Commonwealth - Africa, Asia, Pacific and Caribbean.
8. Improved Commonwealth-wide early warning, and policy decisions making on food production and distribution.

To this end, the dialogue in Malawi has the following goals and objectives.

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[6] *CIAT; World Bank. 2018. Climate-Smart Agriculture in Malawi. CSA Country Profiles for Africa Series. International Center for Tropical Agriculture (CIAT); [30], Washington, D.C. 30 p.*

5.2 The Main Goal

- To stimulate demands for digital public infrastructure (DPI) for agricultural data as the bedrock for digital climate advisory services by national governments to address climate change.

5.3 Key Objectives

- Through a 4-day multi-stakeholder deliberation process the initiative will help to assess the current data management situation in the country to identify gaps and issues that affect digital climate advisory services for agricultural sector.
- Through a 4-day multi-stakeholder deliberation process the initiative will facilitate discussion about the need for a national approach to developing and managing a DPI for agricultural data.
- With the increased awareness on the need for a coordinated approach to data management for the agriculture sector, the initiative aims to advocate for change in policies to address identified gaps and issues.
- By achieving the three above objectives, the initiative aims to build consensus among stakeholders on the need for DPI to be coordinated by national governments.

When the four above objectives are achieved, the initiative expects that the responsible Ministries to initiate policy discussion to address the data coordination challenges in Malawi. More specifically, the following intended outcomes are expected from this initiative.

- Increased awareness on DPI for climate decision.
- Needed policy actions are initiated to address identified gaps and issues for the national DPI.
- Consensus among stakeholders on the need for DPI to be coordinated by national governments is built.

To achieve the above outcomes, the team plans to organise the following activities.

5.4 Activities

1. Diagnosis engagement with multiple stakeholders on current situations of agricultural data management in support of climate resilient agriculture.

The first set of activities will be carried out as diagnosis and agreeing on the current situation of agricultural data management in the respective countries. This will contribute to the identification of shortcomings and challenges of the current data system as well as identifying key stakeholder groups to be involved in the next phase of work – national dialogues.

- Desk-based review and remote consultation with country partners on existing models for agricultural data management to understand current issues and challenges.
- Carry out on-the-ground bilateral engagement with partners in each country on current situations of agricultural data.

2. Policy dialogues on the need for nationally coordinated approach to developing and managing digital public infrastructure for agricultural data.

Secondly, building on the outcomes of the first set of activities, the country level dialogues will be organised. It will bring together actors from private to public sectors that are involved in the agricultural data management processes (from data acquisition to exchange). The dialogues will establish the evidence for the future risks of data that comes with inactions of national governments and validate the importance of addressing the lack of coordination/supervision for agricultural data.

- Take stock of the desk reviews and bilateral engagements carried out during the first set of activities.
- Organise policy dialogues to develop action plan to address challenges and issues facing agricultural data management including the need for a coordinated national approach.

3. **Advocate for changes - the establishment of national coordinated approach to the development and management of DPI for agricultural data.**

At the end of the series of initial engagements and the national dialogues, the initiative will conduct activities to advocate for the establishment of a national coordinated approach to the data infrastructure. Subject to the outcomes from these national dialogues, inputs will be made into regional and international platforms for actions as well as proposal development for funding of these infrastructure at country level.

- Take stock of the bilateral engagements and policy dialogues from the two set of activities.
- Conduct relevant advocacy activities with concerned governments to establish a national approach to develop funding proposals for DPI using the knowledge products developed.

The above activities are expected to deliver following outputs.

- Increased awareness on the need to address gaps and issues in the management of agricultural data that affects digital climate advisory services.
- Channels for discussion about the need for a national approach to develop and manage digital public infrastructure for data in agriculture sector are created.
- Accessible knowledge products are created for digital climate advisory services and policy decisions on national coordination of agricultural data are developed.

5.5 Partners & Participants

The national dialogue will bring together participants from

- Farmer organisations/cooperatives that collect data about their members,
- Ministries of agriculture, fisheries, trade, and others,
- National Statistics Office (NSO)
- NGOs,
- Agribusinesses such as seed and fertiliser dealers,
- Donors operating in the country within the agricultural sector,
- Investors,
- Mobile network operators,
- Research institutes,
- Extension networks,
- Digital/technology firms/platforms,
- Other international organisations, etc. involve in agricultural development in Malawi.