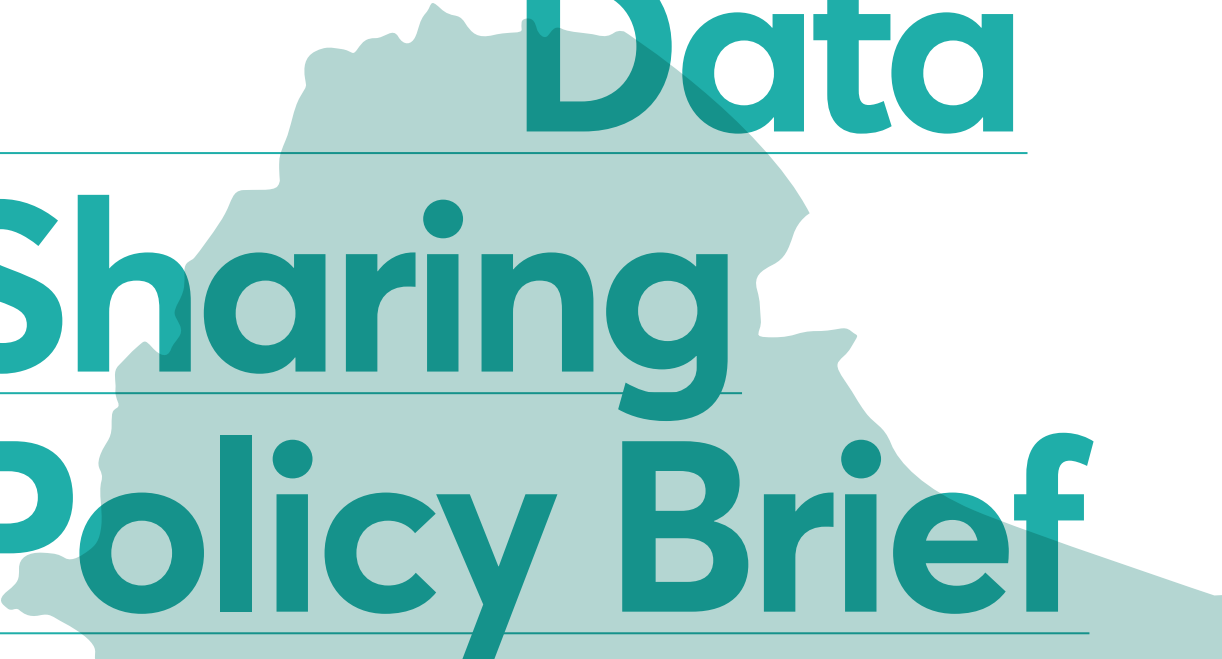

Soil and Agronomy Data Sharing Policy Brief



This document is intended to give a quick understanding of the Soil and Agronomy Data Sharing Policy, and what it could mean for the future of Ethiopia.

What is the Soil and Agronomy Data Sharing Policy?

Scope

In 2017, the Ministry of Agriculture identified the need to change the way soil and agronomy data is made available within Ethiopia. The Soil and Agronomy Data Policy was launched in 2019, through an open and collaborative process with volunteer experts across the field. The policy is an overarching framework to regulate the access and sharing of soil and agronomy data in Ethiopia, owned by the Ministry, and applying to all government bodies as well as non-government organizations working with soil and agronomy data.

Purpose

The policy is designed to generate and amplify data-driven value across the economy and society of Ethiopia. Countries around the world have shown that greater access to national soil and agronomy data leads to a greater sharing of knowledge and better service provision, and ultimately to better crop yields and socioeconomic improvements.

Better data sharing allows farmers, extension workers and others working in the agriculture sector to access the best advice and information on farming practices. Better data leads to better decision making on fertilizer management and optimization. Improvements in soil fertility from better data in Uganda increased crop yields by seven times, while in Kenya and Tanzania, data-driven decisions improved profits on crop yields by hundreds of USD per hectare.

This will be done by applying the FAIR principles to soil and agronomy data, which recommend that data should be Findable, Accessible, Interoperable and Reusable for the people and organizations that need it. These principles make data easier to access and use, so that researchers and other data users get the best information to inform their decisions, and agriculture services are using the most accurate data.



Better data leads to better decision making

Current Activities

The Ministry of Agriculture has been leading activities to achieve the ratification and implementation of this policy in Ethiopia. They have been aided by key organizations, the International Center for Tropical Agriculture (CIAT), the Ethiopian Institute of Agricultural Research (EIAR) and the German Corporation for International Cooperation (GIZ) as well as international partners including the Bill and Melinda Gates Foundation (BMGF), the Centre for Agriculture and Bioscience International (CABI) and the Open Data Institute (ODI).

These groups are all working together with the Coalition of the Willing (CoW), an organization of volunteers sharing soil and agronomy data, and working to make the policy a reality in Ethiopia.

The coalition and their partners have designed standard guidelines so that data creators and data users can follow and benefit from the policy easily, and the implementation guideline to help that process. The guidelines establish standards for collecting data relating to agronomy and soil fertility; soil survey; soil biology; soil, plant, water analysis; agricultural water management; and integrated watershed management; and cross-cutting aspects.

Who is involved?



The Ethiopian agriculture research and development community, led by the Ministry of Agriculture (MoA), recognised the need to improve the soil and agronomy data sharing environment in Ethiopia, and in 2018, the Coalition of the Willing (CoW) was formed with the mission to facilitate wider scale soil and agronomic data access and sharing in Ethiopia.



CIAT is playing a significant role in bringing the CoW members together and coordinating their activities. Currently, CoW is hosted by the Ethiopian Institute of Agricultural Research (EIAR) and receives financial and logistical support from the German Corporation for International Cooperation (GIZ).



Over the past two years, additional international partners the Bill & Melinda Gates Foundation (BMGF), the Centre for Agriculture and Bioscience International (CABI) and the Open Data Institute (ODI) have joined to help the Ministry and the Coalition fulfil their mission.

How can the FAIR principles help agriculture in Ethiopia?

The following is a summary of how the FAIR principles of the Soil and Agronomy Data Sharing Policy will benefit the agriculture sector in Ethiopia.



All soil and agronomy data relating to Ethiopian soil must be FINDABLE

When data about the soil and agronomy of Ethiopia is collected, created or generated, it must be stored in a way that the scientific and agricultural community of Ethiopia can find it.

This means datasets should have a unique identifier, metadata which describes its contents, sources and structure, and be published so they can be easily found with a search engine or within a data portal.

In order to make use of the valuable data created by researchers, it is important that those who need it are able to find that data.



All soil and agronomy data relating to Ethiopian soil must be made **ACCESSIBLE**

Having found the data, any potential user must then be able to access it. This might include storing data in an appropriate database that is maintained, secure, and provides the correct access rights for the people and organizations that need it.

Datasets and their metadata should be easily accessible to those who need it, such as over the web, with appropriate access controls for shared data, protecting confidential data and maximizing benefit for all.



All soil and agronomy data relating to Ethiopian soil must be made **INTEROPERABLE**

When soil and agronomy data is combined with data about weather, climate and other factors that impact agriculture, it can be used to provide insights and inform decisions that benefit the sector and Ethiopia as a whole.

In order to integrate agronomy data with other data, and work with applications or workflows for analysis, storage, and processing, different data sets from different sources need to be able to operate together. For this to happen efficiently, standards need to be applied to the technologies supporting data sharing, including vocabularies, identifiers, and programming languages.



All soil and agronomy data relating to Ethiopian soil must be made **REUSABLE**

The ultimate goal of the Policy is to increase the use and reuse of data. To achieve this, metadata, data and its sources, should be well-described so that it is possible to replicated or combine them in different settings, and for different outcomes. This also involves ensuring that licenses that determine what can and cannot be done with the data are clear and open enough to allow for people and organizations to maximize its benefit. Licences set allowances and limitations, and when clearly communicated to data users, reduce the risk of data being used inappropriately

Data-driven decision making in action

When data users can find, access, combine and reuse data, they can generate new and helpful insights, creating products and services to benefit the Ethiopian agriculture sector, and ultimately society. Improved data sharing has been shown to increase data-driven agriculture, helping countries around the world. Case studies show how data-driven agriculture has helped the agriculture sector in a variety of countries, including:

Farmers in Uganda increasing their yields seven-fold where increased data access powers fertilizer optimization tools advising them how to maximize their profits (CABI, 2019),

Farmers in Malawi are over three times more likely to report an increase in production using data-driven advice around planting, land management, and harvesting than those not (GSMA, 2017),

In Ghana, tailored advice provided by accessing data from across the country has helped some cocoa farmers reduce reliance on pesticide and more than triple their output over the last two years. (FAO, 2019)

To read more examples of how increased data access in the agriculture sector is benefiting farmers, businesses and the wider community, visit:

geoscow.org.et

The Ministry of Agriculture and the Coalition of the Willing continue to work towards better soil and agronomy data sharing in Ethiopia. Join the growing movement around sharing data securely in Ethiopia to benefit your department, organization and country.