

SUMMARY OF POLICY DISCUSSION DOCUMENT: TOWARDS OPEN DATA FOR AGRICULTURAL TRANSFORMATION IN GHANA

Final version

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This is a summary of a policy discussion document that was prepared under the leadership of the e-Agriculture Unit of the Ministry of Food and Agriculture (MoFA) in Ghana. The process was facilitated by the Dutch Ministry of Land, Nature and Food Safety (LNV), with participation of national experts from Ghana, and coordinating consultants from Wageningen University Research (WeNR) and CTA, The Netherlands.

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Foreword

Ghana's agricultural sector plan – *Investing for Food and Jobs* – sets out a clear agenda for transforming Ghana's agriculture into a vibrant, modern and sustainable business. Opening up data – so that anyone can access, use and share it – is viewed as critical for achieving this agenda. Effectively harnessing the growing volumes of data across agri-food chains can create jobs, stimulate youths back into farming, boost agricultural productivity, improve profitability and affordability, and enhance resilience to climate change.

Recognising this potential, the Ministry of Food and Agriculture launched its e-Agriculture Programme in 2015, leveraging digital technologies and open data to help provide more affordable, prompt and efficient agricultural services. This policy discussion document supports strategic planning and investment activities of both the e-Agriculture Programme and its stakeholders who influence open data policy and practice in Ghana. Over 50 stakeholders were mobilised in its development, representing government, local farmer organisations, local NGOs, development agencies, research organisations, and media. The document presents a shared goal, and common principles, policy objectives and action plans culminating from this stakeholder process. The action plans build on existing initiatives of government, business, development agencies and researchers, to collectively operationalise the long-term policy objectives in the next few years. The cooperative development of this policy discussion document is a valuable first step and has demonstrated the willingness of stakeholders from many different sectors and agencies to work collectively towards unlocking the vast benefits that open data can provide to Ghana's food, nutrition and job security.

[has been submitted by e-Agriculture coordinator for signature by Chief Director]

Introduction

Ghana's national development and agricultural sector policies place strong emphasis on transforming and modernizing the agricultural sector to achieve food and nutrition security, boost the country's economy, create jobs and use resources sustainably. Open data is data that anyone can access, use and share. Opening up data offers a powerful tool for agricultural transformation by providing any actor in agri-food value chains with information that can be used to improve their decision making. The effective opening up of data creates jobs, stimulates youths back into farming, improves efficiencies and incomes in agri-food, and empowers local farmers to enhance productivity and yields.

Ghana has recognised that opening up data for agriculture provides many benefits and have made several national policy decisions to support this. For example, Ghana's national development plan, the *Agenda for Jobs* specifically states the importance of information communications technology (ICT) to minimise cost in agriculture and improve efficiencies. Activities are explicitly identified to achieve this and are taken up in the e-Agriculture programme of the Ministry of Food and Agriculture (MoFA) as part of its commitment to its agricultural investment plan, *Investing in Food and Jobs*.

Purpose

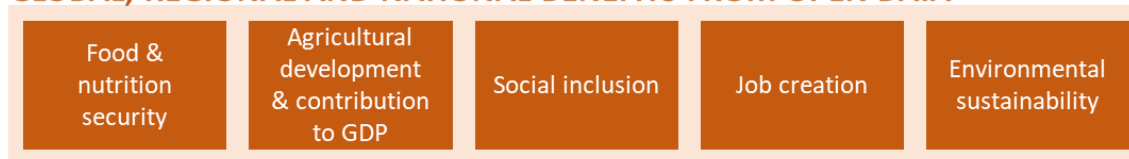
This document supports a range of policy, strategic planning and investment activities by MoFA and other stakeholders who influence open data policy and practice in Ghana. It provides a shared agenda for coordinating efforts and delivering on national and global outcomes for food and agriculture through jointly defining common principles, goals, policy objectives, action plans and priority datasets. These were developed by drawing on the expertise of an inclusive multi-stakeholder platform comprising those involved in data sharing and management across the value chain from producer to consumer to support policy decisions.

The open data goal for agricultural transformation in Ghana is shown in Figure 1. Implementation towards this open data goal would provide many benefits to local Ghanaian citizens, such as improving crop yields, increasing income, lowering input costs, securing land tenure, creating jobs especially for youths, and catalyzing new partnerships, innovations and opportunities (yellow box, Figure 1). These in turn support the achievement of global, regional and national outcomes such as food and nutrition security, agricultural development and contribution to GDP, job creation, social inclusion, and environmental sustainability (orange box, Figure 1).

The open data goal is further underpinned by two 'application layers'. The first layer proposes a set of four policy objectives and associated recommendations (grey boxes, Figure 1), encompassing a diverse range of policy perspectives. These policy objectives provide a longer term shared agenda for cross-sector coordination and cooperation on open data for agricultural transformation. To catalyze implementation of the policy objectives, the second layer includes four short- to medium-term action plans (green boxes, Figure 1). The action plans operationalize one to multiple policy objectives as shown in Figure 1.

Guiding principles to underpin activities towards the open data goal are based on global best practice on open data and the principles underpinning national policies of Ghana. These include accessibility, inclusiveness, participation, coordination and collaboration with advice on how to achieve these. Several priority datasets and their sources were also identified, including: Market Data; Land use and productivity data; Meteorological data (short-term weather data) and Production advice data.

GLOBAL, REGIONAL AND NATIONAL BENEFITS FROM OPEN DATA

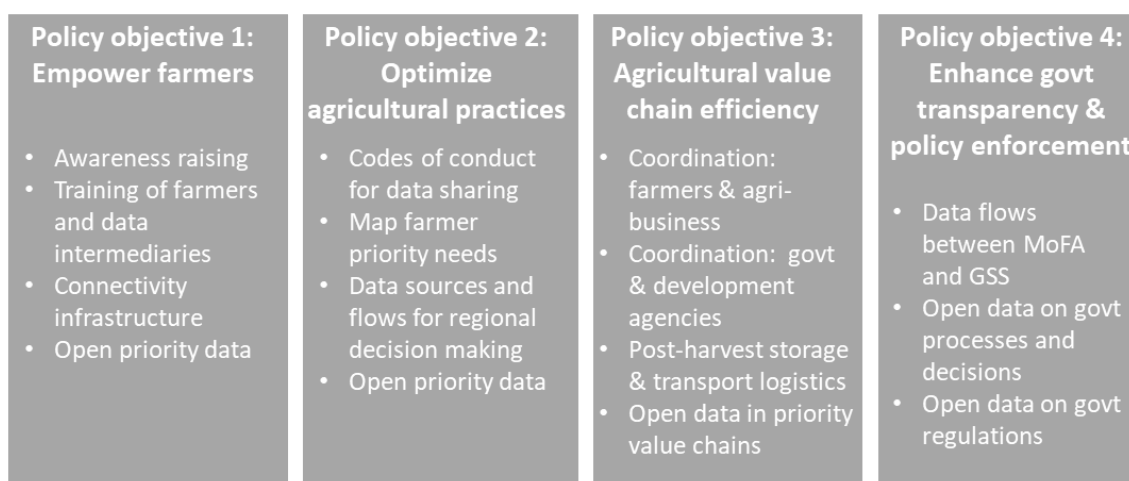


LOCAL BENEFITS TO PEOPLE IN AGRI-FOOD CHAINS FROM OPEN DATA



OPEN DATA GOAL FOR AGRICULTURAL TRANSFORMATION IN GHANA:

To inspire all actors in the food and agricultural sector to share open data as a strategic resource for collectively promoting food and nutrition security, creating employment opportunities and eradicating poverty



Action plan 1

Capacity and training of national data officers for managing timely data flows to the national data portal

Action plan 2

Training programmes for regional and district data officers to mobilize open data flows between local, district, regional and national levels

Action plan 3

Optimizing agricultural practices with open data

Action plan 4

Coordinating collection and dissemination of data from development partners already collecting agricultural value chain data

Figure 1: The open data goal (blue box) for agricultural transformation provides multiple benefits to local Ghanaian citizens (yellow box) and supports global, regional and national outcomes (orange box). The goal is underpinned by two 'application layers': the policy objectives and associated recommendations (grey boxes) and the action plans (green boxes) to catalyse their implementation. The position of the green boxes relative to grey boxes shows the association of action plans with each policy objective.

Policy objectives

Policy objective 1: Empower farmers with access to information and agri-finance;

The agricultural sector employs nearly half of the workforce in Ghana and is the main source of livelihood among smallholder farmers. This policy objective harnesses the agricultural sector's capacity to enhance rural economic development and livelihoods by empowering farmers, especially smallholders, with access to information and knowledge from other actors who are higher up in the agriculture value chains, such as traders or subsidy officials. This is also recognised as a government priority through the explicit incorporation of e-Agriculture into the Presidency's flagship project on *Planting for Food and Jobs*. Short- to medium-term recommendations focus on bringing access of information and digital literacy to rural areas. This will work towards a longer-term objective of stimulating agri-finance. Recommendations include:

- Design communication initiatives that target smallholder farmers in rural areas in creating awareness of digital technologies and open data, and existing e-Agricultural support platforms.
- Provide local training of farmers to improve their digital literacy skills, and the use of the key information sources from which they can benefit.
- Train information intermediaries to develop digital innovations to meet the needs of users.
- Work with the Minister of Communications to ensure reach, capacity and quality of connectivity infrastructure for local users.
- Provide access to information sources in line with priority data identified in the main document.

Policy objective 2: Optimize agricultural practices through digital extension services;

Ghana is endowed with vast areas of high agricultural production potential which can support a wide range of commodities. However, the agricultural sector in Ghana is currently characterized by low yields, well below regional standards. Open data can contribute to improved productivity in three ways. First, it provides agronomic data relevant to specific local conditions (e.g. site-specific crop suitability, pesticide application, best practices). Second, the effective flow of agronomic data supports the advisory and monitoring role of traditional extension service officers, which is critically needed given that the ratio of farmers to extension officers is currently 1 : 1,862. Third, continual demand and supply of such data by farmers provides a means of constantly and effortlessly updating agronomic insights, which ultimately informs regional and national planning to promote agricultural productivity, increase food security, and improve rural livelihoods. Recommendations include:

- Develop codes of conduct for sharing data among the actors in the value chain.
- Identify farmer priority needs and opportunities that agronomic data could address.
- Capacitate extension officers and other information intermediaries to use, interpret and disseminate relevant and timely data-driven information for smallholders, and to be able to show farmers how to make best use of these digital services.
- Logistical coordination and integration of multiple data sources and flows for regional decision making.
- Provide access to information sources in line with priority data identified in the main document.

Policy objective 3: Facilitate coordination and efficiency in agricultural value chains; and

Value chains work best when their actors cooperate to produce higher-quality products and generate more income for all participants along the chain. When actors in one part of the value chain know about performance in other parts of the value chain, they can make more informed decisions and be better linked to opportunities provided by different actors. Coordination capacity is required at all levels (from local farmers to national actors) – within government itself as well as across open data producers and users in agri-food value chains. There also seems to be limited coordination capacity aimed at mobilising the open data collected by development partners. This has resulted in development partner initiatives often running parallel to government efforts. Further, even when development partners are willing to share their data, there is no mechanism for doing so. Recommendations include:

- Build coordination mechanisms between development partners, farmer cooperatives and other agri-business partners. These may take the form of communities of practice, more technical infrastructure platforms, or formal and informal policy agreements.
- Promote internal collaboration between different government agencies for improved data flows, e.g. by participation on the national Data Sharing Committee and effective mobilisation of the associated agricultural Data Task Team.
- Coordinate the collection and dissemination of data from development partners already collecting value chain data.
- Pilot logistics management for post-harvest storage and transport in a priority value chain.
- Pilot how the opening up of data along value chains of major crops can promote efficiencies and innovation, from production (e.g. provision of quality seeds of improved varieties, fertilizers and good agronomic practices, and marketing of farm outputs), through processing to consumption.
- Provide access to identified information sources.

Policy objective 4: Enhance transparency and accountability, and policy enforcement.

Transparency is important to improved public services. Public reporting of data promotes higher quality and more efficient services, choice and accountability. Investors and enablers often require data on public spending in the agricultural sector to promote more efficient decision-making and equity, and prevent corruption. Policy enforcement can also be enhanced by making available lists of items or organisations that are permitted, licensed, restricted or forbidden. This can lower administrative costs, promote internal collaboration between different government agencies, and enable information intermediaries to make this information easily accessible for actors in the agri-value chain to act upon. Recommendations include:

- Identify priority information required from e-Agriculture to support government reporting by the Statistics Research and Information Directorate (SRID) of MoFA, and Ghana Statistical Services.
- Provide open access to key data sources concerning transparency
- Provide open access to key data sources concerning government regulations.

Action Plans

The action plans operationalise the policy objectives in the next three to five years. These were identified using the information provided in the multi-stakeholder platform as well as a desktop situation assessment on the main opportunities and challenges for opening up data for food and agriculture in Ghana, and include:

- (i) Capacity and training of national data officers for managing timely data flows to the national data portal;
- (ii) Training programmes for regional and district data officers to mobilize open data flows between local, district, regional and national levels;
- (iii) Optimizing agricultural practices with open data; and
- (iv) Coordinating collection and dissemination of data from development partners already collecting agricultural value chain data.

The action plans align as much as possible with current initiatives to leverage existing momentum and funding. The first two sets of action plans focus on building the open data coordination capacity of MoFA. Capacity development for open data is required at all levels of governance, from agricultural extension officers, through to district and regional data officers, to data officers within the national ministry. The first action plan focuses on building the national coordinating capacity, without which, much of the open data would be fed into a black hole. The second action plan addresses the mobilizing of open data flows from farmers and extensionists all the way through to the national portal. The third action plan responds to the priority need of enhancing the productivity of agriculture in Ghana and will build on existing open data initiatives in Ghana that address this need. The final action plan responds to a need to build an enabling environment for private sector and development partner investment, through coordinating the collection and dissemination of development partner data. This was strongly supported by development partner stakeholders, who expressed a desire to open up their data should a coordination mechanism exist.

Way forward

The intended way forward would now be to work with government, business and Civil Society Organizations in Ghana together with relevant development partners to adequately resource the action plans, building on and leveraging existing initiatives as much as possible. To this end, a regional workshop has been suggested as a starting point in early 2020 to consider the options for leveraging public, private and development partner investment in the action plans.