

Scaling Digital Agricultural Advisory Services in the Global South: What it Really Takes

Agripath scaling framework



1

Introduction

A

What is DAS?

B

Why are DAS important?

C

Why scale DAS?

D

Why this framework?

2

Priority pillars

3

Other enablers

4

Appendix

Digital Advisory Services (DAS) are digital solutions that provide agricultural advisory content to help farmers make informed decisions

Advisory services help farmers make **informed decisions**, particularly when facing farming challenges. **Traditionally delivered face-to-face**—such as through the Training and Visit (T&V) model¹, these services are now **increasingly integrating digital tools**, enabling providers to reach a **wider farmer base**²



Digital

DAS encompass a **wide range of digital tools** that enable farmers to access agricultural advisory content through various **channels** (e.g., USSD, SMS, IVR, apps), **technologies** (basic mobile, internet, AI), and **formats** (text, voice, video), depending on device access, connectivity, and literacy levels



Advisory

DAS can provide a **wide range of agricultural content** to support **decision-making** across **key farming domains**, including weather and climate information, pest and disease control, land preparation and conservation, water and soil management, and crop and input selection



Service

DAS are services delivered to farmers, either as **standalone tools**—used independently by farmers³—or as **complements to community-based agents (CBA) networks**, where CBA use the tools directly with farmers or to relay information to them⁴

Note : (1) In the training and visit (T&V) system, farmers receive regular face-to-face visits from extension staff to receive farm advisory service ([World Bank](#)) ; (2) [Journal of Innovation Economics & Management, 2022](#) ; (3) Also referred to as farmer-led model ; (4) Also referred to as hybrid and CBA-based models

1

Introduction

A

What is DAS?

B

Why are DAS important?

C

Why scale DAS?

D

Why this framework?

2

Priority pillars

3

Other enablers

4

Appendix

DAS contribute to commercial outcomes—such as increased farmers’ revenues—and to public good outcomes by promoting more sustainable food systems

DAS can be grouped into **two main models** based on their **main intended outcome**

Commercial model

Main intended outcome: Generate revenue and increase quantity and/or quality of agricultural output ultimately boosting smallholder farmers’ revenues

Public good model

Main intended outcome: Promote the adoption of sustainable land management¹ (SLM) practices to drive the transformation of agricultural food systems

The two DAS models differ across key dimensions, including:



Customers

Each model **targets different customers**. In the commercial model, **smallholder farmers or private companies** are paying, as they draw benefits from the service. In the public good model, the **customer is an external actor** (e.g., government, NGO) who pays for the farmers to benefit from the service



Partnerships

Each model **requires distinct partnerships**: public good models often involve **institutional or public actors** (e.g. research institutions for SLM content, public community-based agents - CBA- networks), while commercial models rely on **commercial partners**



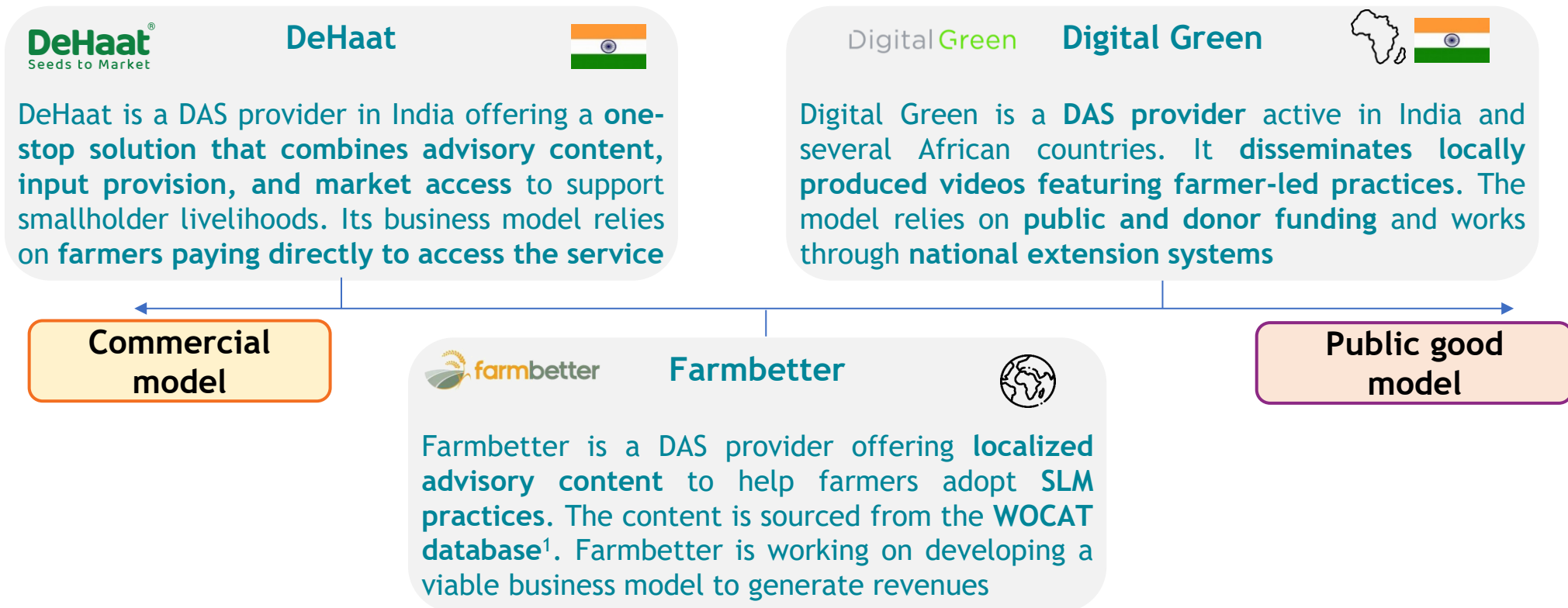
Risk

Each model is exposed to different **types of risk**. Public good models are more vulnerable to **fluctuations in public or donor funding**. Commercial models face **market-related risks**, such as competition or insufficient demand

Note : (1) Sustainable Land Management is defined as the use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions ([WOCAT](#))

In practice, the distinction between the commercial and public good model is often blurred, as many DAS aim to achieve both types of outcomes

In practice, the **distinction between the two models is often blurred**, as many DAS pursue a **combination of outcome types** (e.g., increased farmer income and enhanced climate resilience). Rather than being strictly separate, commercial and public good models should be seen as **two ends of a spectrum**, with **most DAS falling somewhere in between**. Selected examples of DAS are **positioned along this spectrum to illustrate the diversity of approaches**



Note : (1) [WOCAT](#)

1

Introduction

A

What is DAS?

B

Why are DAS important?

C

Why scale DAS?

D

Why this framework?

2

Priority pillars

3

Other enablers

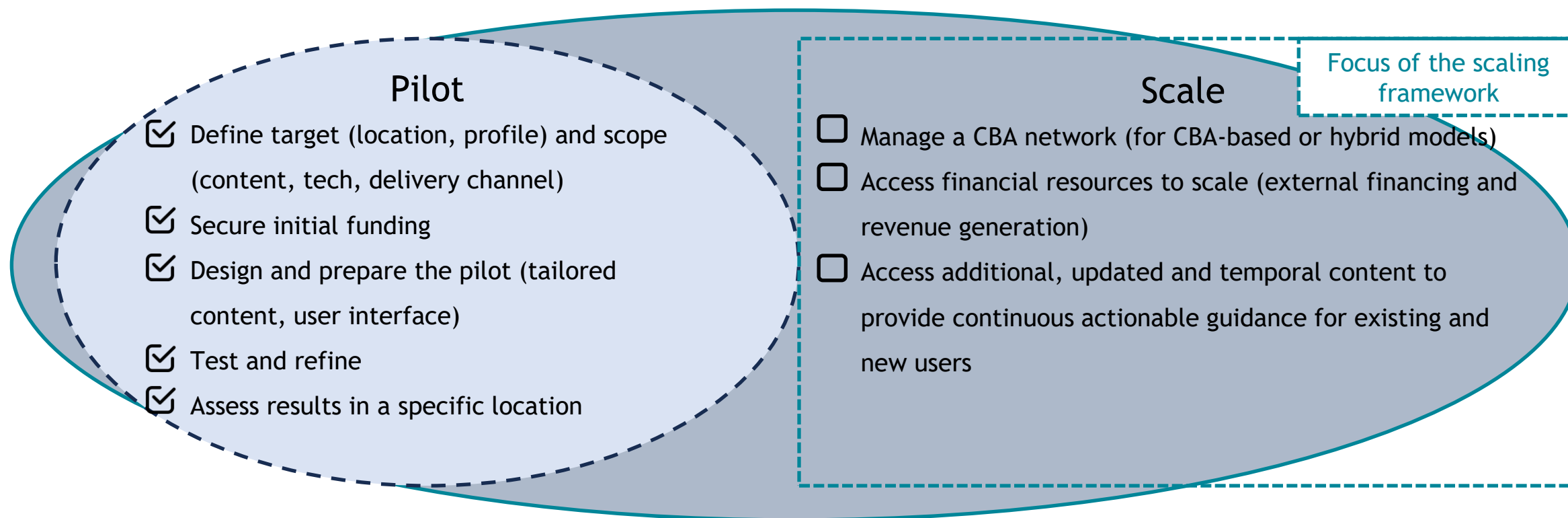
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Appendix

Scaling DAS refers to increasing the socioeconomic impact from a small to a large scale of coverage - it usually follows a successful pilot phase

In the context of DAS, scaling is defined as **increasing the socioeconomic impact from a small to a large scale of coverage**. It usually follows a successful pilot phase. While some activities—such as defining the target, designing the service, or testing it—are clearly part of the pilot, the **boundary between the two phases can be blurred**. This is partly because the **conditions under which the service is tested during the pilot are never fully identical to those encountered during scale**. The diagram below outlines the main objectives typically associated with each phase

What are pilot and scale?



1

Introduction

A

What is DAS?

B

Why are DAS important?

C

Why scale DAS?

D

Why this framework?

2

Priority pillars

3

Other enablers

4

Appendix

This scaling framework supports DAS in addressing key scaling challenges, and supports partners in creating the favorable conditions needed for scale

Many DAS succeed at the pilot stage, but **few manage to scale**. Yet **scaling is key to unlocking their full potential**—and remains a major challenge. This framework is therefore designed to **support both DAS and their partners in addressing the core barriers to scale**

What are the objectives of the scaling framework?

A

Help DAS scale their services by addressing common scaling misconceptions

- **Identify misconceptions** about scaling that hinder the expansion of DAS, and contrast them with reality
- **Explain why these misconceptions are misleading**
- **Share key takeaways and practical guidance to help DAS scale their services**

B

Support DAS partners in fostering the favorable conditions¹ that enable DAS to scale

- **Identify the favorable conditions that enable DAS to scale**
- **Offer insights into how these conditions support scaling**
- **Provide recommendations to DAS partners to help foster their emergence**

Note : (1) Favorable conditions refer to all factors that facilitate the scaling of DAS. They are grouped into various topics: infrastructure and assets, national agriculture vision, business environment, human resources and users and communities

The main audiences for this scaling framework are DAS, and their key partners including development partners, NGOs, governments and investors

Who is this scaling framework for?

A

For DAS: to help them scale their services by addressing common scaling misconceptions



DAS

This will be covered in Part 2 of the scaling framework



2

Priority pillars

B

For DAS partners: to support them in fostering the favorable conditions that enable DAS to scale



Development partners



Non-governmental organizations (NGOs)



Governments



Investors

This will be covered in Part 3 of the scaling framework



3

Other enablers

Each part of the scaling framework is organized around key thematic areas for both DAS and their partners

A Help DAS scale their services by addressing common scaling misconceptions



2

Priority pillars

Section 2 includes the three priority pillars for DAS to scale

2

Priority pillars

- A** How to read?
- B** Community-based agents (CBA)
- C** Business model and financing DAS scaling
- D** Content

B Support DAS partners in fostering the favorable conditions that enable DAS to scale



3

Other enablers

Section 3 includes the five other enablers through which partners can create the favorable conditions for DAS to scale

3

Other enablers

- A** How to read?
- B** Infrastructure and assets
- C** National agriculture vision
- D** Business environment
- E** Human capital
- F** Users and communities

- 1 Introduction
- 2 Priority pillars
 - A How to read?
 - B Community-based agents (CBA)
 - C Business model and financing DAS scaling
 - D Content
- 3 Other enablers
- 4 Appendix

Structure for presenting the priority pillars (1/2)

This part of the scaling framework covers the three priority pillars for DAS to scale. Each of the **three pillars** is presented in a **dedicated section**. Each section consists of **two subsections**: an **introduction** (presented below) and **key takeaways** (presented on the next slide)

B

Community-based Agents (CBA)



B.2

Key takeaways



Context & Definition

Community-based agents (CBA), also referred to as extension agents, act as **intermediaries between farmers and the DAS**. CBA may be **using the DAS with the farmers** (CBA-based model) or they may **provide support to the farmers to use the DAS on their own** (hybrid model). CBA are essential to scaling as:



CBA increase adoption of the service

CBA are crucial to **DAS adoption**, acting as **trusted intermediaries** who build farmers' **confidence** and **expand outreach** to new user groups - even for **high-tech DAS**



CBA ensure long-term service use

CBA ensure **continued service use** by offering **in-person support and troubleshooting**, preventing drop-off. Their on-the-ground feedback supports service improvement

CBA can represent a **wide variety of profiles**, including:

- **Public CBA**, such as government-affiliated agents working in agriculture, livestock, or rural development at the state, regional, or municipal level;
- And **private CBA**, such as input suppliers, microfinance or mobile money agents, cooperative staff, NGO field agents, agronomists, or veterinary service providers.

"One of the first challenges with extension networks is identifying what exists—their roles and incentives vary hugely across contexts." Company supporting digital innovation in agricultural services in Africa

The first topic in the introduction, titled **"Context & Definition,"** defines the **key concepts** covered in the pillar and **explains why this pillar is critical for scaling DAS**

B

Community-based Agents (CBA)



B.2

Key takeaways



Common scaling misconceptions

For DAS relying on CBA, scaling the service ultimately means **scaling the CBA network**—deciding **which type of network to partner with**, and **how to recruit, train, and retain CBA at scale**. These challenges are often **overlooked due to common misconceptions about CBA**. The table below contrasts these misconceptions with the reality on the ground and presents key takeaways for DAS providers and partners. These takeaways are detailed in the following slides

Misconception	Reality	Takeaway
Well-designed DAS can replace CBA by directly engaging with farmers	CBA are highly critical to DAS adoption in the Global South, regardless of the service quality. DAS scaling strategies must incorporate CBA , clearly defining their role as well as the implications for the operating model and cost structure	1 Define your approach to integrate CBA
Qualified and motivated CBA are readily available to support DAS deployment	In many contexts, CBA are scarce and under-supported . Scaling DAS requires deliberate efforts to identify, train, and retain CBA	2 Develop a CBA integration strategy
Recruiting and retaining female CBAs involves the same processes as recruiting male CBAs	Women face greater barriers to becoming CBA , including mobility constraints, safety concerns, and social norms. Reaching and retaining them requires dedicated efforts and tailored support mechanisms	3 Ensure the CBA integration strategy is gender-responsive

The second topic, titled **"Common scaling misconceptions,"** highlights the **main misconceptions preventing DAS from scaling**. These are presented **alongside actual realities and linked to key takeaways**, which are detailed in the following subsection

Structure for presenting the priority pillars (2/2)

B Community-based Agents (CBA)

B.2 Key takeaways

DAS & partners: Government, private companies, NGOs

1 Define your approach to work with CBA (1/2)

Two main approaches can be used by DAS to work with CBA: either directly managing a CBA network, or partnering with an organization managing a CBA network

Focus for the rest of the section

Definition

Manage a CBA network

The DAS provider recruits CBA to engage directly with farmers to promote service uptake. The DAS directly manages the network (recruitment, training, etc.). In return, CBA receive financial or non-financial incentives from the DAS (e.g., salary or commissions, free access to the service, or growth opportunities)

Implications for DAS

- Strong dependency on the existence and quality of existing CBA networks
- High operational costs (e.g., recruiting and training costs, commission for CBA, etc.)

Partner with an organization managing a CBA network

The DAS provider partners with an external organization (e.g., government, private company, NGO) managing a CBA network. The DAS can be bundled with another service offered by the partner and is delivered through the partner's network. In return, the DAS partner gains access to the DAS technology¹, content, or analytics

- Requires a compelling value proposition to attract distribution partners (e.g., high-quality content, innovative technology)

The first topic in the introduction, titled “Context & Definition,” defines the key concepts covered in the pillar and explains why this pillar is critical for scaling DAS

B Community-based Agents (CBA)

B.2 Key takeaways

DAS & partners: Private companies

2 Define a CBA integration strategy (1/2)

DAS can leverage partnerships to digitize and strengthen their CBA integration strategy. Examples of potential partners (listed for illustration purposes only) are listed below

1 Identify existing CBA network



In India, Digital Green identifies and leverages existing public CBA networks by partnering with government-employed agricultural officers already active in rural communities to deliver its advisory content¹

2 Recruit and incentivize CBA



Based in Nigeria, Extension Africa is a leading platform in agricultural extension. It specializes in training rural youth and partners with agriculture services for CBA recruitment²

3 Train CBA



In Kenya, Learn.ink delivers tailored, gamified training content for digitally inexperienced CBA, along with meaningful certifications. Over 100,000 CBA are now trained each month using the platform³

4 Monitor CBA performance



For monitoring CBA, the agricultural platform Timeero enables tracking of CBA's GPS location, hours worked, task completion, and scheduling. It compiles this information to generate reports on work patterns and improve productivity⁴

DAS providers are the main targets for these key takeaways. However, some are also intended for their partners (e.g., government, private companies, NGOs). The target audience is indicated in the top right corner of each slide

- 1 Introduction
- 2 Priority pillars
 - A How to read?
 - B Community-based agents (CBA)
 - C Business model and financing DAS scaling
 - D Content
- 3 Other enablers
- 4 Appendix



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“One of the first challenges with extension networks is identifying what exists—their roles and incentives vary hugely across contexts.” Company supporting digital innovation in agricultural services in Africa



Common scaling misconceptions

For DAS relying on CBA, scaling the service ultimately means **scaling the CBA network**—deciding **which type of network to partner with**, and **how to recruit, train, and retain CBA at scale**. These challenges are often **overlooked due to common misconceptions about CBA**. The table below contrasts these misconceptions with the reality on the ground and presents key takeaways for DAS providers and partners. These takeaways are detailed in the following slides

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- Requires a compelling value proposition to attract distribution partners (e.g., high-quality content, innovative technology)

Note : (1) E.g., [Ignitia](https://www.ignitia.com/) provides localized weather forecast technology to agribusinesses and input suppliers, who use its services to offer bundled solutions to farmers

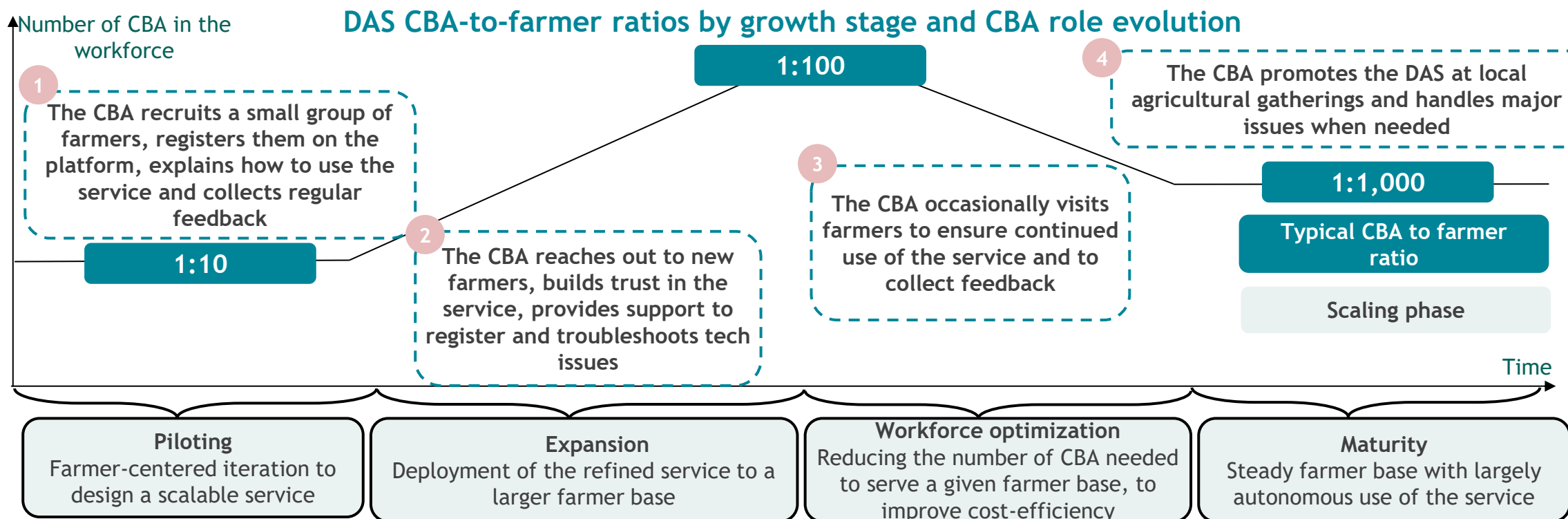




1

Define your approach to work with CBA (2/2)

For DAS managing their own CBA network, a key operational parameter is **defining an optimal CBA-to-farmer ratio**—one that ensures **sufficient farmer support while enabling scalability**. The chart below illustrates how this ratio evolves over the course of the scaling process





2

Define a CBA integration strategy (1/2)

DAS providers managing their own CBA networks must define a robust **integration strategy** to **identify, recruit, incentivize, train, and monitor** CBA. Interviews conducted highlighted that recruiting and retaining CBA is particularly challenging for DAS providers

“DAS struggle to retain their CBA. Most of them are very loosely engaged with the company. They usually move around different companies and may even come back after some time.” Provider of digital training solutions for CBA in Africa

This CBA integration strategy should follow these steps:

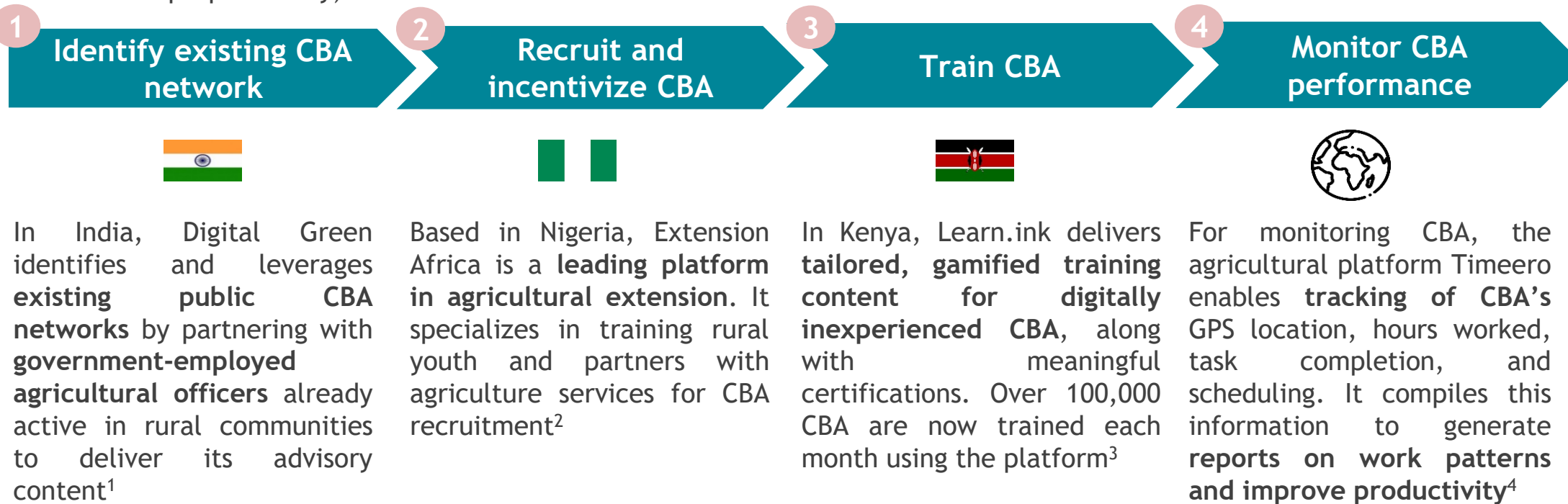


More details on this process can be found in the [Agripath toolkit](#).



2 Define a CBA integration strategy (1/2)

DAS can leverage partnerships to digitize and strengthen their CBA integration strategy. Examples of potential partners (listed for illustration purposes only) are listed below



Note: (1) [Digital Green](#) ; (2) [Extension Africa](#) ; (3) [Learn.ink](#) ; (4) [Timeero](#)



3

Ensure the CBA integration strategy is gender-responsive

A gender-responsive CBA integration strategy is critical to overcome structural barriers that limit women's participation—as both CBA and end-users—including time poverty, mobility restrictions, and lower access to education. Below are selected **best practices** to help make each step of the CBA integration strategy more gender-inclusive

1

Identify existing CBA network

- Map women-led community-based organizations (e.g., women Farmer Product Organizations in India) to recruit CBA
- Partner with women officers in local governments or NGOs to identify female volunteers active in rural advisory roles

2

Recruit and incentivize CBA

- Ensure husband/ community buy-in by conducting sensitization meetings to explain the value and safety of the CBA role for women
- Offer flexible incentive structures (e.g., childcare support, shared positions with a male counterpart)

3

Train CBA

- Deliver training in local languages and through oral/visual formats to accommodate lower literacy and digital literacy levels
- Schedule training during off-peak hours (e.g., after morning chores or during school hours)
- Use women-only training groups to ensure a comfortable learning environment

4

Monitor CBA performance

- Track gender-disaggregated indicators (e.g., number of female CBA retained, average outreach to women farmers, satisfaction among women CBA)
- Use mobile-based self-reporting tools that allow CBA to report without needing to travel or attend meetings, reducing mobility barriers



- 1 Introduction
- 2 Priority pillars
 - A How to read?
 - B Community-based agents (CBA)
 - C Business model and financing DAS scaling
 - D Content
- 3 Other enablers
- 4 Appendix



Context & Definition (1/2)

One of the main barriers to DAS scaling is **limited access to financial resources**. Scaling typically requires a combination of:

**Accessing
external financing**

Accessing **external financing** refers to **securing funds**—such as grants, equity, or loans—from a **range of actors** (e.g., institutional donors, investors, banks, microfinance institutions, or informal sources like friends and family) **at various stages of business development**

**Generating revenue**

Generating revenue refers to **earning money from entities or individuals** (e.g., institutional actors, private companies, or farmers themselves) who are **willing to pay for the value provided by the DAS**. These payments should enable DAS providers to **reach and maintain long-term profitability**

While most DAS rely on both **external financing and generating revenue**, the relative share of each in the financial resources available—and the point at which a DAS must start generating sufficient revenue to sustain its operations—**varies depending on various factors including the nature of the service** (e.g., public good or commercial DAS) **and its target audience** (e.g., farmers, agribusinesses, institutional entities)

C Business model and financing DAS scaling



C.1 Introduction



Context & Definition (2/2)

Accessing external funding and generating revenue are both essential to DAS scaling:



Accessing external financing

- **At the pilot stage:** developing a DAS requires time and upfront investment, as providers must identify market fit, iterate the product, and define a viable business model—often before it's generating any revenue
- **At the scaling stage:** Expanding into new areas (e.g., new countries, value chains, features) is often necessary to grow the user base and unlock economies of scale, but it typically requires large upfront investment



Generating revenue

- For commercial models—and in some cases, to ensure the sustainability of public goods models—generating revenue is essential to achieve profitability and maintain operations independently of external funding, which is often uncertain or short-term (such as grants or donor subsidies)
- Revenue generated can be reinvested in activities that support scaling (e.g., improving the service, expanding into new regions, recruiting CBA)



Raising funds and generating revenue are mutually reinforcing: fundraising provides the resources needed to design, test and validate a profitable business model; in turn, generating revenue signals market potential and facilitates further fundraising, notably from private sector/commercial investors (VC or PE funds, private companies)





Common scaling misconceptions

Although most DAS providers recognize the importance of financial resources, persistent misconceptions—particularly around external financing opportunities and how to generate revenue—often hinder their ability to scale. The table below contrasts these **common misconceptions with actual field realities** and highlights **key takeaways for DAS providers and their partners**. These takeaways are further developed in the following slides

Scaling misconception	Reality	Key takeaway
There is one-size-fits-all approach to access financial resources to scale DAS	No single financing model fits all DAS. While some may rely on external financing for longer, others will need to generate revenue early on. Revenue can be generated from providing advisory services (potentially bundled with another offer), monetizing farmer data, or selling access to the DAS farmer network — not only to farmers, but also to private companies and government institutions	1 Identify financing opportunities 2 Define how to generate revenue
Financing DAS scaling is only about mobilizing financial resources for the DAS provider	Even when a DAS has a sound business model and sufficient financing, scaling may fail if vulnerable farmers — especially women — cannot afford to access, use or implement the advisory received (e.g., lack of phone credit, smart feature phone, or input purchasing power). Supporting vulnerable farmers financially is therefore essential	3 Ensure vulnerable farmers access the financial resources required to use DAS

C Business model and financing DAS scaling



C.2 Key takeaways

DAS & partners: government, NGOs

1 Identify financing opportunities (1/3)

The financial approach for scaling DAS **depends on several factors**, including the **diversity of external financing opportunities** it can access. Beyond donor funding and grants, **DAS can attract support from a wide range of stakeholders**. The table below is designed to help DAS identify the full range of potential external financing sources

What type of financing is available for scaling DAS?

Multiple actors can provide financing...



Public and development actors (donors, governments)



Financial institutions (banks, microfinance institutions)



Investment actors (angel investors, venture capital -VC- and private equity -PE- funds, impact funds)



Corporate (private companies)



Informal sources (Friends & family)

...through different financing mechanisms...



Gift
(monetary or in-kind)



Equity
(e.g., equity participation, share subscriptions)



Debt
(e.g., commercial or concessional loan)



Innovative financing mechanisms (e.g., crowdfunding)

C

Business model and financing DAS scaling



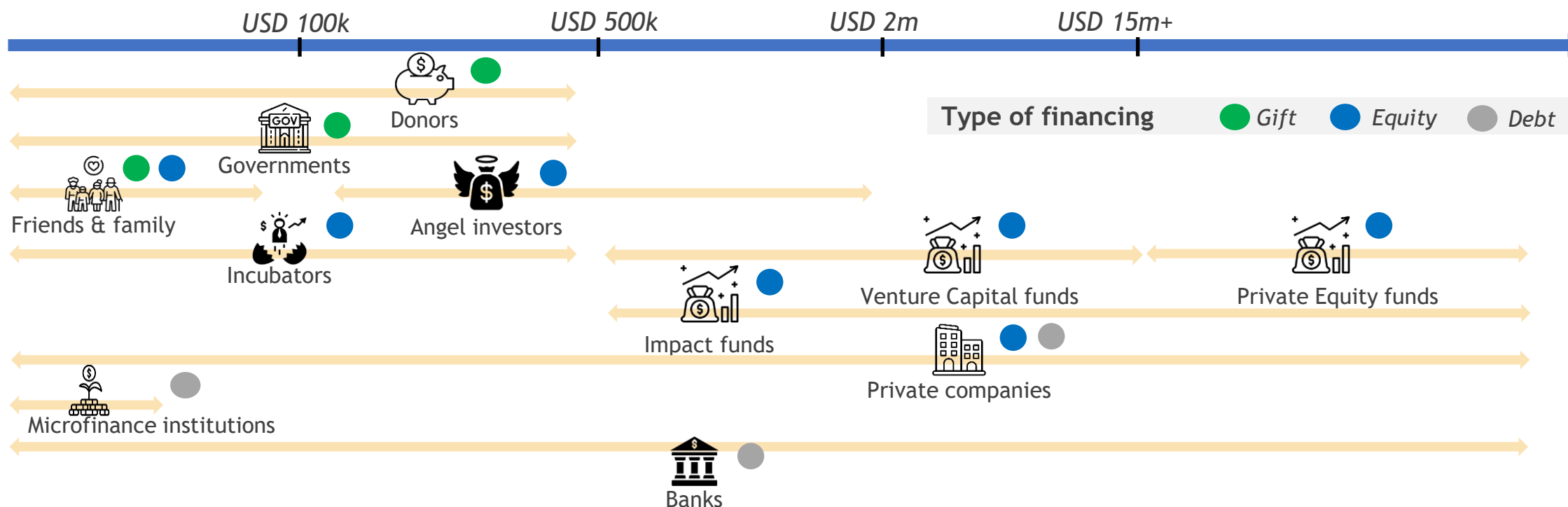
C.2 Key takeaways

DAS & partners: government, NGOs

1

Identify financing opportunities (2/3)

...providing funding at different stages of business development





Identify financing opportunities (3/3)

Beyond the **availability of financing opportunities in a given geography**—for example, crowdfunding options may not always be accessible in parts of the Global South—the **types of financing a DAS can access also depend on the nature of the service** (e.g., commercial or public-good model, target audience, partnerships, etc.). As an illustration, the table below outlines how **financing strategies typically differ between commercial and public-good DAS**

Commercial model

- Leverage financing from **angel investors, banks, and venture capital or private equity funds**
- Mainly access **equity and debt financing**, based on the expectation of financial returns
- Must **demonstrate business viability to access further financing** to expand to new contexts (e.g., new countries, value chain or feature)

Public good model

- Leverage financing from **donors or governments**
- Mainly access **gift** - or have donors or governments as clients of their services- as returns are primarily social or public
- Can **access financing to expand to new contexts** even without a proven profitable business model, and as long as the impact (social or environmental) is proven

Depending on their target users, DAS may also **access specific types of financing**. For instance, DAS aiming to reach and benefit women farmers can attract investment from gender-focused impact funds

C

Business model and financing DAS scaling



C.2 Key takeaways

DAS & partners: government, private companies



2

Define how to generate revenue (1/3)

Beyond external financing, a key challenge for DAS is to **define how to generate revenue**. This requires: a) **defining a value proposition** and b) **identifying customers**

A

Define your value proposition



Advisory content

Farmers benefit from **tailored advisory content** that **improves outcomes** such as climate resilience, farm income or crop yields and quality



Data on farmers

Organizations receive **data on farmers** to guide **business decisions** (e.g., product design) or **research** (e.g., climate resilience assessments)



Reaching out to farmers

Organizations are provided **access to the DAS farmer network** to promote products or services to farmers

B

Identify customers



Governments

Ministries, government agencies or research institutions



Private companies

Businesses connected to farmers either as **service providers** (e.g., banks, insurers, input suppliers) or as **clients** (e.g., agribusinesses)



Farmers

Farmers who see value in the information provided by the DAS and are willing to pay for it

“The cost of developing DAS shouldn't fall on farmers alone. Agribusinesses and private actors already active in the sector can be paying clients – they have a clear interest in DAS development.” Uganda-based agricultural expert



C

Business model and financing DAS scaling



C.2 Key takeaways

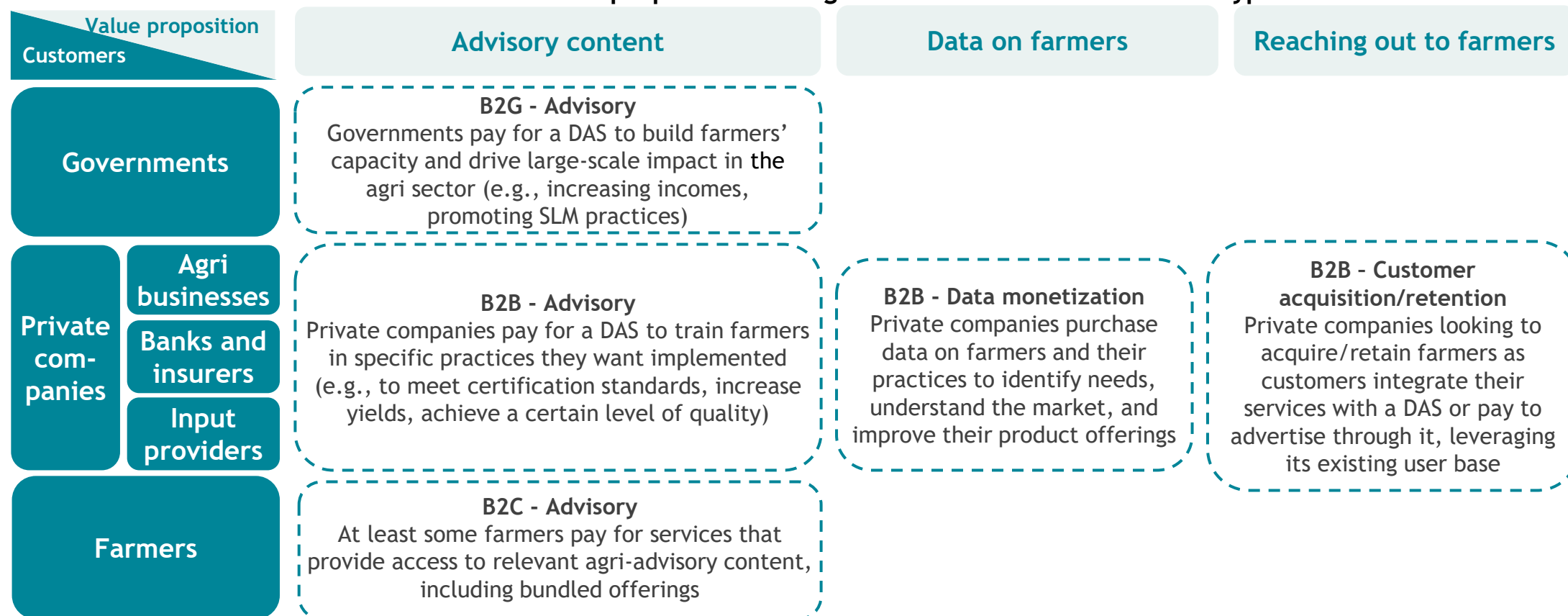
DAS & partners: government, private companies



2

Define how to generate revenue (2/3)

The matrix below illustrates how **different value propositions** can generate revenue from various types of customers



C

Business model and financing DAS scaling



C.2 Key takeaways

DAS & partners: government, private companies



2

Define how to generate revenue (3/3)

DAS requirements to implement each model are presented below, along with examples

Models	B2G - Advisory	B2C - Advisory	B2B - Advisory	B2B - Data monetization	B2B - Customer acquisition
Requirements	DAS is developed in close partnership with the government from the outset, with high standards for monitoring and data quality applied throughout	DAS' farmer base has reliable digital connectivity, direct access to digital devices, and sufficient disposable income to afford paying for DAS	There is a flourishing private sector ecosystem willing to procure/sell products or services to smallholder farmers DAS adjust their content to meet the specific farmer training needs of companies (e.g., advisory on company-specific practices)	DAS must comply with strict data regulations in farmers' and clients' countries (e.g., on storage, consent)	DAS has a broad base of farmers who have sufficient disposable income to afford complementary services
Examples	 Digital Green sells DAS to governments, including video-based content and an AI-powered chatbot, helping reduce the cost of extension services per farmer ¹	 M-Omulimisa uses a freemium DAS model - general advisory is free, while additional services such as localized weather data require payment ²	 In India, PepsiCo contracts farmers for potato supply and partners with a DAS to alert them of weather events, helping prevent losses ³	 Plantix, a free app for crop diagnosis, shares farmer data with input providers to help them analyze crop diseases and refine their products ⁴	 In India, SBI partners with nurture.farm, an agtech providing DAS among other services, to offer insurance products to nurture.farm farmers ⁵

Note : (1) OpenAI - Farmer.Chat aims to reduce from \$35 to \$0.35 ; (2) M-Omulimisa ; (3) PepsiCo ; (4) Plantix ; (5) SBI General Insurance



C Business model and financing DAS scaling

C.2 Key takeaways

DAS & partners: government, NGOs companies, NGOs

3

Ensure vulnerable farmers access the financial resources required to use DAS

Vulnerable farmers - especially women - often lack the financial means to use DAS - and benefit from them. This limits DAS providers' ability to reach them, **reducing both their social impact and customer base.** The table below outlines key financial barriers faced by women and how DAS can help overcome them

Barrier

Limited access to credit due to lack of collateral, ID or financial history prevents women from affording DAS-related expenses (e.g., devices, data, inputs)

Limited control over household finances prevents women from using DAS independently, as they may be unable to act on advice (e.g., buy inputs) without approval from others

Support DAS can provide

DAS can partner with fintechs to enable credit scoring using platform data and farmer profiles, **helping women qualify for financial services to access DAS**

DAS can embed financial services designed for women to use directly, **enabling them to act on recommendations** (e.g., buy inputs) without relying on household decision-makers

Example

Esoko, a Ghana-based DAS, partnered with **LendXS**, a fintech providing digital credit scoring solutions, to help women farmers access loans based on farm-level data¹

EzyAgric, a Uganda-based DAS, integrated credit into its platform, allowing women to purchase farm inputs directly in-app following advisory recommendations². In 2022, women made up 80% of its user base³

"The end-user doesn't just want information – they want concrete solutions: funding, fertilizer, seed. The developer should enable access to all of this through the platform." Uganda-based agricultural expert

Note : (1) [Facs Global](#) ; (2) [Ugstandard](#) ; (3) [The Observer](#)

- 1 Introduction
- 2 Priority pillars
 - A How to read?
 - B Community-based agents (CBA)
 - C Business model and financing DAS scaling
 - D Content
- 3 Other enablers
- 4 Appendix



Context & Definition

One of the key challenges for DAS to scale is **accessing and delivering content** – specifically, a large volume of **localized, evidence-based, and up-to-date agricultural advisory content** that is freely or affordably available, legally shareable, and ready for distribution. Access to content is key for scaling DAS for the following reasons:



Increase user base

To expand their user base, **DAS need to reach new crops or varieties, geographies, or population segments** (e.g., women farmers). To do so, they should have access to **extensive content repositories**—available in multiple languages and formats (e.g., text, audio), and tailored to specific geographic contexts



Ensure sustained use to support the business model

Sustained use of DAS is critical to business viability. Maintaining user engagement requires **dynamic content that responds to environmental factors** (e.g., agrometeorological advisory). Long-term adoption also relies on **ongoing learning opportunities**, which call for content that comprehensively covers value chains



Limit investment in content development

To scale, DAS providers need **large volumes of evidence-based agricultural content**. Localizing this information requires significant capital investment and technical expertise, making access to **affordable or free localized content** essential to prevent content costs from rising disproportionately with scale



Scaling misconceptions

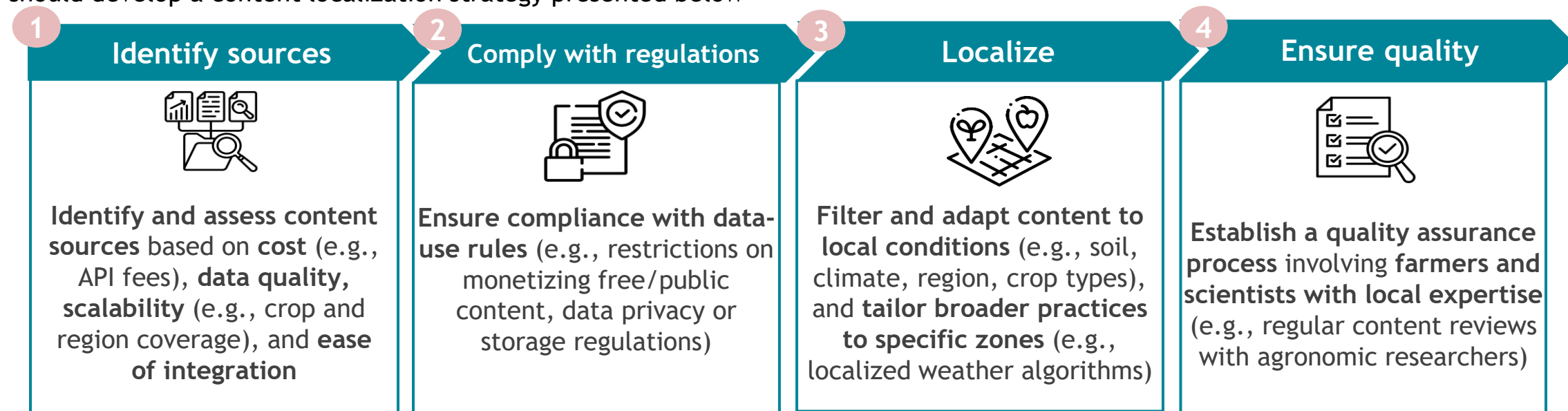
Misconceptions—especially the **underestimation of the effort required to localize content and translate it into actionable, inclusive guidance**—can **prevent DAS from scaling**. The table below contrasts **common misconceptions with field realities** and outlines **key takeaways for DAS providers and their partners**. These takeaways are explored further in the following slides

Scaling misconception	Reality	Key takeaway
DAS providers can take a full scientific database and apply it directly in the geographies where they operate	To ensure content is truly localized, DAS providers must identify which practices are most relevant for each geography . This requires a process to assess local priorities and bundle scientifically-sound recommendations with contextual knowledge (e.g., climate, soil, etc.)	1 Define a content localization strategy
DAS providers only need to deliver localized information to farmers to achieve impact	Localized content will only create impact if delivered in a way that is actionable and inclusive — aligned with farmers' priorities, easy to understand, and adapted to their constraints (e.g., literacy, time, format, resources).	2 Provide actionable and inclusive guidance for farmers



1 Define a content localization strategy (1/2)

One of the biggest challenges for DAS is **translating global agricultural content into localized information**. To do so, DAS providers should develop a content localization strategy presented below



Farmbetter offers a good example of this process: it used the [WOCAT](#) database to generate localized content tailored to farmers in different regions (Tanzania, Uganda, Burkina Faso, Nepal, and India)

“Quality assurance means investing in both farmers and scientists – those who understand the field, and those who ensure the science behind what’s delivered digitally.” Uganda-based agricultural expert



1 Define a content localization strategy (2/2)

A key part of content localization often involves **partnerships for DAS**, notably with **weather data providers**. As farmers rely heavily on agrometeorological forecasts, weather data is among the most valued DAS features. However, **these partnerships are viable only if weather data is easy to access** (e.g., limited integration effort) and **affordable**¹

Localization through access to weather data - Successful example of India and comparison with Uganda



In India, DAS can access free bi-weekly localized weather forecasts from the Indian Meteorological Department (IMD)²

- 1 DAS providers require government approval for full access to IMD content
- 2 DAS providers access free Agrometeorological Advisory Services bulletins via IMD APIs or automated pipelines, delivering five-day weather forecasts at the block level (cluster of villages)
- 3 Agrometeorological content is either freely disseminated to farmers or integrated into DAS to generate context-specific recommendations



In Uganda, DAS providers partner with private weather forecasters using predictive models to access localized weather data

- 1 DAS providers pay international forecast providers to access localized information, with costs depending on API request volume and data type³
- 2 DAS users incur fees for real-time localized weather data (e.g., M-Omulisima, a DAS in Uganda, charges UGX 1,000 per week ~0.27 USD to access this data⁴)
- 3 DAS providers are vulnerable if their weather forecast provider discontinues content production or raises costs

Note : (1) [GSMA, 2024](#) ; (2) [Government of India, 2022](#) ; (3) Pricing is not publicly available ; (4) [M-Omulimisa](#)

2

Provide actionable and inclusive guidance for farmers (1/2)

Even highly relevant localized content is of little use to farmers unless it is translated into practical guidance. To ensure DAS deliver actionable and inclusive support, two additional steps should follow content localization

5

Customize content



Content is **prioritized based on farmers' needs and practical feasibility** (e.g., translation into local languages, alignment with common local challenges and farmers' available resources). **AI-based tools can support this process**, while acknowledging current limitations—particularly in handling local language contexts

6

Deliver actionable guidance



DAS delivers content that is **accessible, timely, and interactive** (e.g., push messages aligned with farmers' schedules), **adapted to users' digital skills**, and **available in appropriate formats** (e.g., text, voice, speech)

More information on how to ensure **delivered content is trusted and used** by farmers can be found in the [section users and communities](#)

“A key challenge is making digital services accessible in local languages, given how many are spoken – not just everyday speech, but also agricultural terms that make sense to farmers.” Uganda-based agricultural expert

2

Provide actionable and inclusive guidance for farmers (2/2)

Building on the need to translate localized content into practical guidance, it is equally essential to ensure this guidance is **inclusive of women farmers**. This means **adapting both the content and its delivery** to women's specific roles, time constraints, literacy levels, and access to technology. **The best practices** below illustrate how DAS can do so

5

Customize content

Relevance

- Focus on guidance for **tasks predominantly performed by women**—such as weeding, planting, and harvesting¹
- Prioritize **recommendations with visible short-term benefits** e.g., composting techniques reducing input costs

6

Deliver actionable guidance

Accessibility

- **Enable offline access**, as women often have limited mobility and fewer opportunities to visit digital service points
- **Ensure usability on basic feature phones** requiring less frequent updates or data

Comprehension

- Use **intuitive language adapted to women with limited literacy**
- **Keep messages short and to the point**, to match the limited time women often have available

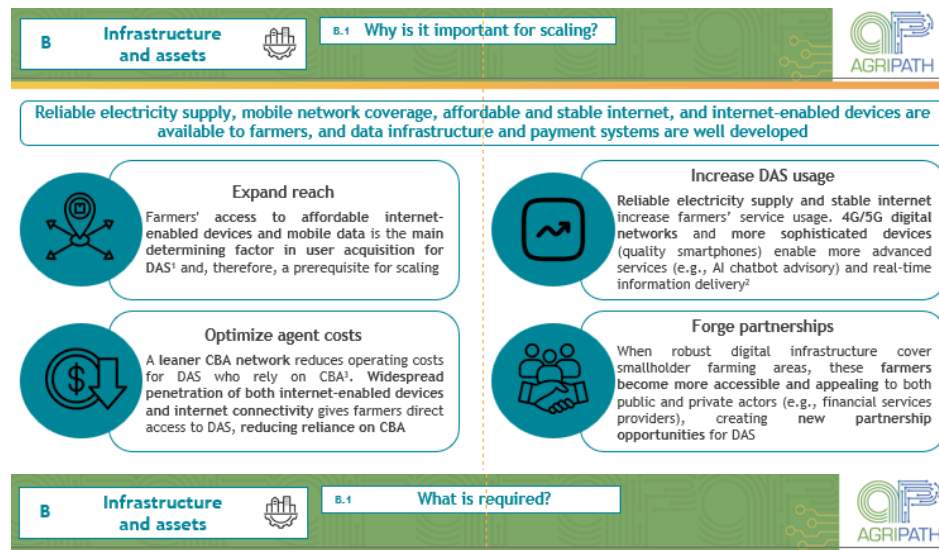
Distribution

- **Use audio formats** (e.g., voice messages), which are easier to process while multitasking or in low-literacy contexts
- **Time content release** around typical daily routines (e.g., midday when children are at school)

1	Introduction
2	Priority pillars
3	Other enablers
A	How to read?
B	Infrastructure and assets
C	National agriculture vision
D	Business environment
E	Human capital
F	Users and communities
4	Appendix

Structure for presenting other enablers of the scaling framework (1/2)

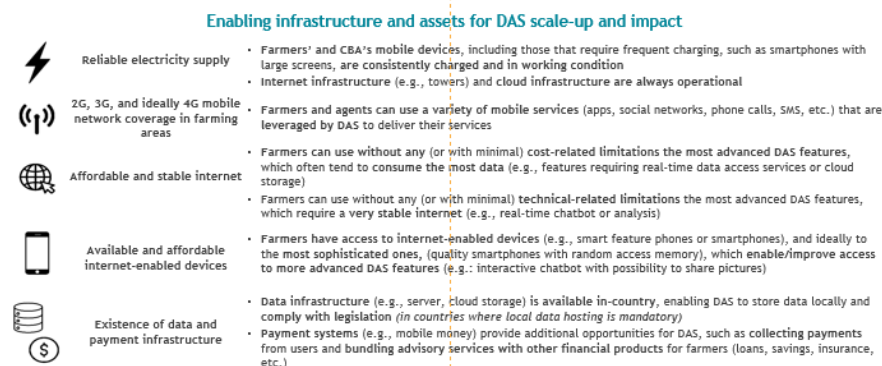
This part of the scaling framework covers all the **other enablers** through which partners can create the favorable conditions for DAS to scale. Each of the **five enablers** is presented in a dedicated section



The main sentence in bold at the top of the first page outlines the **favorable conditions for scaling DAS** in relation to each enabler

The first subsection, titled “**Why is it important for scaling?**” explains why these favorable conditions are necessary for scaling DAS (e.g., increasing the number of users, reducing costs, forging partnerships)

The second subsection, titled “**What is required?**”, outlines what is needed to create these favorable conditions for DAS to scale in relation to this enabler



Structure for presenting other enablers of the scaling framework (2/2)

B Infrastructure and assets

B.1 How can it be achieved?

Governments

- Encourage the development of mobile and internet coverage nationwide, including in remote/rural areas, through mechanisms such as Universal Service Funds (USFs)
 In Nigeria, the Universal Service Provision Fund (USPF) uses a Public-Private Partnership (PPP) to improve mobile coverage and ICT services nationwide, for example providing subsidies to operators that build network infrastructure in underserved, rural regions¹
- Adopt a supportive legal framework to improve access and affordability of internet-enabled devices by measures such as reducing taxes on smart feature phones, smartphones, and data bundles
 Uganda could explore the potential benefits of revisiting the 12% internet data levy that was introduced in 2021²

B Infrastructure and assets

B.1 How can it be achieved?

Development partners

- Co-finance large-scale public infrastructure projects to expand rural connectivity in underserved areas
 In Niger, the World Bank committed \$100 million to improve access to mobile phone services and high-speed internet in rural areas, with financing split equally between a grant and a concessional loan to the Government of Niger¹

NGOs

- Promote access to internet-enabled devices for vulnerable groups by subsidizing devices or facilitating flexible financing options such as pay-as-you-go, microloans, payment installment plans, or vouchers
 In India, the Smart Snehi program in Tamil Nadu provides microloans to help women entrepreneurs buy smartphones²

The third subsection, “How can it be achieved?”, presents **practical, stakeholder-specific recommendations** (e.g., for governments, development partners, private companies, etc.), along with concrete examples of successful implementations in various contexts

- 1 Introduction
- 2 Priority pillars
- 3 Other enablers
 - A How to read?
 - B Infrastructure and assets
 - C National agriculture vision
 - D Business environment
 - E Human capital
 - F Users and communities
- 4 Appendix



Reliable electricity supply, mobile network coverage, affordable and stable internet, and internet-enabled devices are available to farmers, and data infrastructure and payment systems are well developed



Expand reach

Farmers' access to affordable internet-enabled devices and mobile data is the main determining factor in user acquisition for DAS¹ and, therefore, a prerequisite for scaling



Increase DAS usage

Reliable electricity supply and stable internet increase farmers' service usage. 4G/5G digital networks and more sophisticated devices (quality smartphones) enable more advanced services (e.g., AI chatbot advisory) and real-time information delivery²



Optimize agent costs

A leaner CBA network reduces operating costs for DAS who rely on CBA³. Widespread penetration of both internet-enabled devices and internet connectivity gives farmers direct access to DAS, reducing reliance on CBA



Forge partnerships

When robust digital infrastructure cover smallholder farming areas, these farmers become more accessible and appealing to both public and private actors (e.g., financial services providers), creating new partnership opportunities for DAS

Note : (1) GSMA, 2020 ; (2) E.g., meteorological updates ; (3) Including both CBA-based and hybrid models



Enabling infrastructure and assets for DAS scale-up and impact



Reliable electricity supply

- Farmers' and CBA's mobile devices, including those that require frequent charging, such as smartphones with large screens, are consistently charged and in working condition
- Internet infrastructure (e.g., towers) and cloud infrastructure are always operational



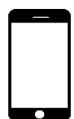
2G, 3G, and ideally 4G mobile network coverage in farming areas

- Farmers and agents can use a variety of mobile services (apps, social networks, phone calls, SMS, etc.) that are leveraged by DAS to deliver their services



Affordable and stable internet

- Farmers can use without any (or with minimal) **cost-related limitations** the most advanced DAS features, which often tend to **consume the most data** (e.g., features requiring real-time data access services or cloud storage)
- Farmers can use without any (or with minimal) **technical-related limitations** the most advanced DAS features, which require a **very stable internet** (e.g., real-time chatbot or analysis)



Available and affordable internet-enabled devices

- Farmers have access to **internet-enabled devices** (e.g., smart feature phones or smartphones), and ideally to the **most sophisticated ones**, (quality smartphones with random access memory), which **enable/improve access to more advanced DAS features** (e.g.: interactive chatbot with possibility to share pictures)



Existence of data and payment infrastructure

- **Data infrastructure** (e.g., server, cloud storage) is **available in-country**, enabling DAS to store data locally and **comply with legislation** (*in countries where local data hosting is mandatory*)
- **Payment systems** (e.g., mobile money) provide additional opportunities for DAS, such as **collecting payments** from users and **bundling advisory services with other financial products** for farmers (loans, savings, insurance, etc.)

B

Infrastructure
and assets



B.3

How can it be achieved?



Governments

- Encourage the development of mobile and internet coverage nationwide, including in remote/rural areas, through mechanisms such as Universal Service Funds (USFs)
 *In Nigeria, the Universal Service Provision Fund (USPF) uses a Public-Private Partnership (PPP) to improve mobile coverage and ICT services nationwide, for example providing subsidies to operators that build network infrastructure in underserved, rural regions¹*
- Adopt a supportive legal framework to improve access and affordability of internet-enabled devices by measures such as reducing taxes on smart feature phones, smartphones, and data bundles
 *Uganda could explore the potential benefits of revisiting the 12% internet data levy that was introduced in 2021²*

Note: (1) [USPF](#) ; (2) [Reuters](#), 2021.





Development partners

Co-finance large-scale public infrastructure projects to expand rural connectivity in underserved areas



In Niger, the World Bank committed \$100 million to improve access to mobile phone services and high-speed internet in rural areas, with financing split equally between a grant and a concessional loan to the Government of Niger¹

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Promote access to internet-enabled devices for vulnerable groups by subsidizing devices or facilitating flexible financing options such as pay-as-you-go, microloans, payment installment plans, or vouchers



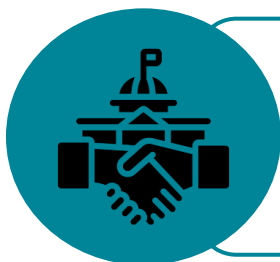
In India, the Smart Snehidi program in Tamil Nadu provides microloans to help women entrepreneurs buy smartphones²

Note: (1) [World Bank](#) ; (2) [Development Monitoring and Evaluation Office, Tamil Nadu, India](#)

1	Introduction
2	Priority pillars
3	Other enablers
	A How to read?
	B Infrastructure and assets
	C National agriculture vision
	D Business environment
	E Human capital
	F Users and communities
4	Appendix



An inclusive national agriculture strategy, supported by dedicated resources, promotes a transparent regulatory framework and revenue-generating agriculture. It acknowledges the impacts of climate change, encourages SLM practices, and aims to strengthen farmers' capacity, notably through the active promotion of DAS



Reduce marketing costs and create opportunities for B2G business models

Active government promotion of DAS **raises awareness** of these services, thereby reducing marketing costs for DAS providers. The integration of DAS across all strategic pillars of the national vision also creates **opportunities for B2G business models**, where DAS providers offer their services to government stakeholders



Grow paying customer base

Government support for the **development of a thriving, revenue-generating agricultural sector**, combined with a transparent regulatory framework, helps create a **stable and investable environment**—broadening the base of **paying actors** such as agribusinesses, agri-SMEs, and profit-generating small-scale farmers



Decrease DAS OpEx costs

As part of the national agriculture vision, the technical and digital **capacities of key actors**—including smallholder farmers and CBA—is **strengthened**, thereby **reducing the cost of deploying DAS** in a given region¹

Note: (1) E.g. lower training and marketing costs

C

Nature agriculture vision



C.2

What is required?

Key components and content of an enabling national agricultural vision to support DAS scale-up

Components of the national agriculture vision



National agriculture strategy outlining the vision, priorities, and clear targets for the sector



Dedicated budget, aligned with the strategy objectives and covering cost of developing and maintaining a CBA network



Responsibilities assigned to ministries or government agencies to implement the strategy and achieve its targets



Transparent regulatory framework (e.g., for land tenure and ownership, environmental regulations, labor and social standards, trade and tariffs, etc.)



Promotion of revenue-generating agriculture through local value chains development, efficient domestic production or cash-generating export production



Capacity building of the agricultural workforce including CBA to boost agri skills and SLM adoption, supported by incentive structures and performance evaluations



Climate change awareness and the promotion of SLM are key elements of the national vision and are encouraged across all strategic pillars



Inclusion of all farmers, including women, is an integral part of the national vision and is promoted through various measures (e.g., women-specific initiatives, etc.)



Promotion of DAS as a solution to achieve strategic targets is embedded across all strategic pillars (e.g., workforce capacity building, promotion of SLM practices)

 Most critical components for scaling DAS



Governments

Governments should develop their national agricultural visions by incorporating the characteristics outlined in the preceding slides, with support from development partners where necessary. Examples of successful initiatives include:

- Ensure institutional accountability by assigning each ministry and department clear strategic objectives aligned with the national agriculture vision



In India, the Department of Agriculture and Farmers' Welfare (DA&FW) under the Ministry of Agriculture leads the national agricultural strategy and its implementation. Within the department, several divisions are responsible for different aspects of the strategy. For instance, the Crops Division oversees the National Food Security Mission, which aims to boost grain production, while the Plan Coordination Division plays a higher-level role—working across divisions to set goals and timelines for the agricultural Five Year Plans¹

- Strengthen farmers' capacity and awareness of SLM practices by establishing dedicated institutes to assess climate impacts and share practical, relevant information



In India, the National Initiative on Climate Resilient Agriculture (NICRA), aiming to improve the resiliency of Indian agriculture through strategic research and capacity building², has established 448 Climate Resilient Villages where SLM practices are shared with farmers through training and agricultural planning

- Increase understanding of DAS value among farmers and key agriculture actors



In Rwanda, to accompany the launch of a new government DAS platform, the Ministry of Agriculture and Animal Resources (MINAGRI) hosted a promotional ceremony to draw attention to the new service, inviting farmers, agribusinesses and development partners³

Note: (1) [Department of Agriculture & Farmers' Welfare](#) ; (2) [NextIAS](#) ; (3) [MINAGRI](#)



Governments

Governments should strengthen localized agricultural research systems so as to provide evidence that can be leveraged for DAS content

- Prioritize agricultural research on value chains based on local challenges and identify topics needing content customization



*According to farmers in the West Central region of Burkina Faso, research on pearl millet that specifically addresses *S. hermonthica* infestation is particularly relevant*

- Develop a research strategy to address gaps in local knowledge by establishing research institutions, allocating a budget, and setting SMART¹ indicators



*Example of SMART indicator: The Direction of the Central Region of the Environment and Agriculture Research Institute of Burkina Faso is tasked to identify *S. hermonthica*-resistant pearl millet varieties to boost productivity by 10% by 2028*

- Implement a structured monitoring framework to track research progress against defined objectives
- Incentivize the use of scientific and research material by DAS to increase the practical uptake of knowledge (e.g., certification or recognition scheme)

Note : (1) Specific, Measurable, Achievable, Relevant, Time-bound

1	Introduction
2	Priority pillars
3	Other enablers
	A How to read?
	B Infrastructure and assets
	C National agriculture vision
	D Business environment
	E Human capital
	F Users and communities
4	Appendix

D Business Environment



D.1 Why is it important for scaling?



A supportive ecosystem for investment and business creation attracts capital and enables the development of DAS and other key players in the agricultural and digital sectors (e.g., financial services start-ups)



Attract funding for DAS

Private investors are more likely to fund DAS that operate in **stable political, fiscal, and monetary environments**, as these conditions **reduce investment risks** and **enable investors to cash-out their returns**



Encourage local DAS (and non-DAS) entrepreneurs

Supporting entrepreneurs as individuals, facilitating business creation, and encouraging innovation are key to **fostering local entrepreneurship**. This applies not only to DAS but also to non-DAS services (e.g., fintech), whose **development creates partnership opportunities for DAS**, further enhancing the potential for scaling the DAS industry



Attract larger players who can become DAS customers or partners

A conducive business environment will **attract larger private sector players**, such as agro-companies, input providers, and financial institutions, who can **become DAS customers or partners**, thus facilitating the scale-up of the DAS industry

D Business Environment



D.2

What is required?



Enabling business environment for scaling DAS and maximizing its impact

Local business environments should **support private investment in the country**, as well as local business creation by entrepreneurs. This includes supporting individuals creating their own business, simplifying administrative processes for company creation, and providing targeted support during the early stages of a company's development. It should also foster innovation through mechanisms such as regulatory sandboxes and support structures for entrepreneurs

Encouraging private investment

**Political**

A stable and secure political environment¹ (e.g., absence of conflict), free from international sanctions, that makes DAS investments a viable option for investors

**Economic & Legal**

A stable and predictable legal, fiscal and monetary environment² (e.g., stable forex and tax regimes), improving investor confidence and returns on investment in DAS

**Socio-demographic**

Although countries cannot change their socio-demographic, understanding their strengths and weaknesses and striving to maximize or minimize their impact can make the market more attractive

Supporting local entrepreneurship

**People**

A regulatory, fiscal, and social framework that supports entre-preneurs as individuals to encourage business creation (e.g., social protection for entrepreneurs, job unemployment benefits)

**Companies**

Simple, quick, and affordable/free administrative procedures to open a business (e.g., digitized registration processes), along with specific tax incentives to support new companies in their early years (e.g., reduced taxes)

**Innovation & Data**

Regulatory framework (e.g., sandboxes), data infrastructure (e.g., farmer data platforms), and support structure (e.g., incubators) encourage innovation

Note: (1) This can be assessed using [World Bank's political stability index](#) ;



D Business Environment



D.2

How ?



Governments

Develop a legal framework that promotes entrepreneurship by providing direct assistance to entrepreneurs as individuals, simplifying administrative processes for businesses, and encouraging innovation



In Tunisia, the government launched Startup Tunisia in 2018—a three-pronged initiative aimed at supporting startup creation (Startup Act), building a dynamic entrepreneurial ecosystem (Startup Ecosystem), and attracting venture capital (Startup Invest)¹. Since its launch, the initiative has helped raise \$100M in investment and create over 50,000 jobs²

Introduce fiscal incentives (e.g., tax deductions or capital gains exemptions) to encourage private investment in the start-up ecosystem despite high risk, thereby improving DAS access to financing



In Tunisia, the 2018 Startup Act introduced tax incentives for investors, allowing them to deduct start-up investments from their taxable income. It also exempts capital gains from taxation when investors sell shares or equity stakes in start-ups

Provide legal framework to support DAS access to innovative financing mechanisms (e.g., crowdfunding)



In Tunisia, the government adopted Law No. 2020-37 on Crowdfunding in August 2020, significantly expanding financing options for DAS and startups more broadly. The law recognizes three crowdfunding models: lending, equity investment, and donation. It complements the Startup Tunisia initiative by improving access to funding for entrepreneurs and early-stage ventures³

Note : (1) [Startup Tunisia](#) ; (2) [Abramundi](#) ; (3) [GSMA](#)



D Business Environment



D.2 How can it be achieved?

Development partners

Support governments in developing a stable political, economic, fiscal and monetary environment and offer de-risking mechanisms to encourage investors to invest in these countries¹



The World Bank published a report on five Sahel countries, including Burkina Faso, outlining the steps needed to attract private sector capital. The report highlights the expansion of blended capital investments, guarantees, and risk management tools as key strategies²

Provide grants to early-stage DAS to bridge the funding gap by supporting their initial development phase until they are able to attract private investors



In India, GIZ launched the SuATI (Supporting agroecological transformation processes in India) programme in 2021 with a €3M fund to provide grants to early-stage DAS providers, helping them test and deliver agroecology-focused advisory tools for smallholder farmers

Provide targeted support to help DAS connect with investors through structured mechanisms such as pitch events, mentoring programmes, or matchmaking platforms, and highlight their social impact as a key differentiator



In Tanzania and Uganda in 2024, the Innovators Sprint Up Programme—led by GIZ — supported 1,000 young entrepreneurs in building the skills to access funding. Participants pitched their ventures in a pitch day competition, receiving feedback from industry experts and significantly increasing their visibility to potential investors³

Note: (1) List of FCS in 2023 according to the World Bank ; (2) World Bank ; (3) EAC Germany



D Business Environment



D.2

How can it be achieved?



Investors

Prioritize investments in DAS as high-impact solutions combining social and environmental returns



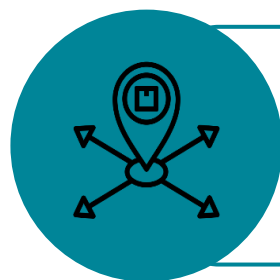
Acumen, a non-profit impact investor, committed \$300M over five years (2025-2029) to support around 100 agricultural enterprises in the Global South providing innovative climate solutions, including DAS¹



1	Introduction
2	Priority pillars
3	Other enablers
	A How to read?
	B Infrastructure and assets
	C National agriculture vision
	D Business environment
	E Human capital
	F Users and communities
4	Appendix



Human capital across the DAS ecosystem is strengthened by providing foundational skills to all stakeholders (e.g., farmers, CBA, DAS entrepreneurs, researchers)



Increase addressable market

Building foundational literacy and numeracy among smallholder farmers—alongside sharing **basic agricultural knowledge**—enhances their **capacity and motivation to engage with DAS** content, ultimately broadening the reach of these services



Boost access to skilled workforce

As specialized skills in business, tech (incl. AI skills), and agronomy become more widely available, DAS gain **better access to a skilled workforce** and a steady pipeline of qualified candidates—helping to **drive service expansion**



Reduce farmer and CBA onboarding costs

A higher baseline level of education improves **farmers' and agents' ability to adopt new technologies**, reducing the need for DAS to invest heavily in training to onboard users and CBA

E

Human Capital



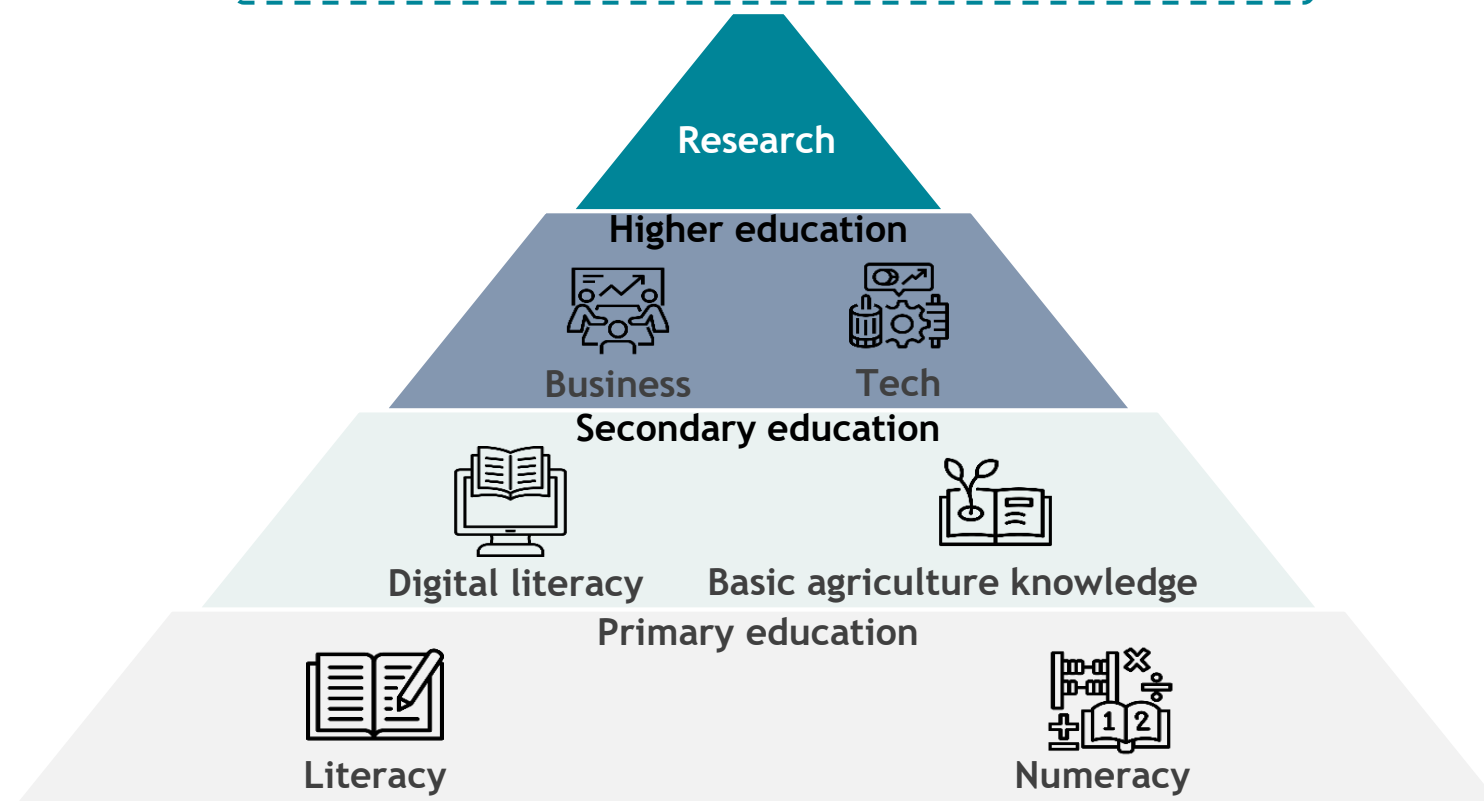
E.2

What is required?

Scaling DAS through skills development across education levels

Scaling DAS requires investing in human capital by equipping all stakeholders with key skills across the education pathway, as shown below

Skills requirements by education-level



Expected implications on DAS and SLMs

Top notch academics conduct locally relevant research in agronomy, thereby creating relevant content for DAS and promotion of SLM

Skilled entrepreneurs emerge and can recruit professionals with business, agriculture or tech skills

A larger pool of extension CBA -and ideally farmers- have expertise in DAS and SLM practices

All smallholder farmers are able to understand and apply DAS content regarded as general knowledge



Governments

Embed DAS and SLMs in the teaching curriculum at various levels

Leverage AI to deliver high-quality education in the Global South, particularly in underserved or remote areas with limited access to qualified teachers

 *In Sierra Leone, the Ministry of Technical and Higher Education (MTHE) launched Teacher.AI, a WhatsApp-based chatbot, in April 2023 to help teachers with lesson planning, tips, and real-time guidance. Its low-bandwidth design makes it usable even in remote areas. MTHE trained 1,000 teachers on the platform, with strong uptake—many continued using it after the training¹*

Implement policy incentives to attract highly qualified international talent, such as flexible and affordable visa programs tailored to young professionals

 *In 2024, the Indian government launched a new visa category—the G20 student visa—targeted at scientists, researchers, and academics from G20 countries, with the aim of attracting global talent to boost innovation and expand the pool of highly qualified professionals working in India*

Note: (1) [Red Social Innovation](#) ; (2) [Times of India, 2024](#)



Development partners and NGOs

Develop training programs for young agribusiness leaders, with a strong focus on hands-on learning and SLM practices, aligned with evolving job market needs



In DRC, Kenya, and Nigeria, the STEP project by CGIAR (Consultative Group on International Agricultural Research) equips the next generation of agriculture leaders with digital agriculture skills and practical field-based training¹

Fund initiatives to fill talent gaps and facilitate matchmaking between talent and DAS seeking professionals



In Uganda, Refactory² provides intensive tech training for young professionals and connects them with companies seeking to recruit developers. Its flagship initiative, Refactory Career Day, brings together tech graduates and employers for direct recruitment opportunities³

Note : (1) [IIITA](#) ; (2) Refactory is funded by development partners including NORAD, GIZ, and UNICEF ; (3) [Refactory](#)

1	Introduction
2	Priority pillars
3	Other enablers
	A How to read?
	B Infrastructure and assets
	C National agriculture vision
	D Business environment
	E Human capital
	F Users and communities
4	Appendix



A large number of farmers with similar economic, socio-cultural and farming profiles have common needs that DAS can address and are ideally organized into farmer collectives



Scale through the acquisition of a large number of users

To scale, DAS must deliver **lasting value** to a **sufficient number of farmers**. If farmers do not perceive **clear benefits**, they will **stop using the service**—even if it is free. The service must also meet the **needs of a sufficiently large user base**; DAS that serve only a **narrow segment of farmers** or **address a limited set of needs** struggle to scale



Reduce user acquisition costs

Reducing **user acquisition costs** is essential for scaling. DAS can achieve this by **leveraging existing social structures**, such as farmer collectives and producer organizations, to **onboard many users at once**. **Recruiting farmers individually** is **costly** and **time-consuming**, while working through **organized collectives** is more **efficient** and **scalable**



To scale, DAS ideally need a **large group of farmers with similar** economic, socio-cultural and farming **profiles sharing common needs that DAS can adress**. Farmer collectives can also facilitate user acquisition and thus scaling. This dynamic is illustrated in the infographic below

User and community enablers for scaling DAS



Economic profile

e.g., income and education levels,
digital assets owned, access to
financing

A large number of farmers with similar profiles...

Socio-cultural profile

e.g., language, level of trust in
digital and advisory tools

Farming profile

e.g., climate, type of agriculture,
varieties and crops



...share common needs that DAS can address...

Farmers face **common needs** that advisory services can meet (e.g., farmers face yield losses caused by parasitic weeds, which can be reduced by adopting improved practices such as crop rotation and seed treatment)



...and are ideally organized into farmer collectives

Farmers structured into **collectives** make it easier for DAS dissemination as providers can engage directly with collectives to reach large numbers of farmers at once



Governments

Encourage the formation of farmer collectives by defining a national strategy that includes a legal framework, financial incentives, and implementation mechanisms such as technical support and capacity building — positioning these collectives as potential partners for DAS deployment



In 2020, India launched the Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs) initiative, with the goal of establishing all 10,000 FPOs by 2027-2028. To achieve this, several support measures were introduced¹



Financial support: Each FPO receives up to 1.8 million rupees (approx. \$21,600 USD) over three years to cover management and operational costs. In addition, individual farmers can receive a subsidy of up to 2,000 rupees (approx. \$24 USD), creating a solid financial foundation for organizations and their members. A credit guarantee cover of up to 20 million rupees (approx. \$240,000 USD) per FPO is also available, encouraging financial institutions to extend credit



Support structures: Cluster-Based Business Organizations (CBBOs) provide technical assistance to FPOs, strengthening member capacity and mobilizing farmers. CBBOs receive up to 2.5 million rupees (approx. \$30,000 USD) over five years to support their operations

In February 2025, India's Ministry of Agriculture & Farmers Welfare announced that the initiative had achieved its goal of 10,000 FPOs. 3 million farmers are now connected to FPOs, ~40% of whom are women

Note: (1) [Ministry of Agriculture & Farmers' Welfare](#)

- 1 Introduction
- 2 Priority pillars
- 3 Other enablers
- 4 Appendix

Agripath aims to empower smallholder farmers in the Global South



Agripath is a five-year applied research and implementation program aiming at **empowering smallholder farmers**, and especially women, to transition to sustainable land management (SLM)¹ practices through effective and efficient digital pathways²

Agripath focuses on five countries in the Global South



Burkina Faso



Uganda



Tanzania



India



Nepal

AgriPath is being implemented by a consortium of partners



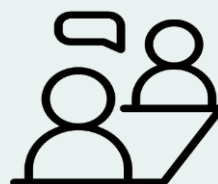
This scaling framework was developed based on extensive research that combined mixed methodologies including desk review, interviews, and fieldwork

What is this scaling framework based on?



Desk review

In-depth desk review of reports, academic publications, newspapers articles, policy briefs, institutional websites and databases, and grey literature produced by governments, development partners, research institutions, NGOs, and DAS



30 key informant interviews¹

In-depth interviews conducted with Agripath partners, governments, research institutions, development partners, DAS and other agriculture private stakeholders



Three country focus

- **10 in-person interviews** conducted with governments, DAS, research institutions in **India**
- **6 remote interviews** conducted with governments, NGOs and agriculture private stakeholders in **Burkina Faso**
- **3 remote interviews** conducted with NGOs, DAS and research institutions in **Uganda**

Note : (1) Conducted between January and March 2025

The 30 organisations interviewed for this research are listed below

Country	Organization	Type
Burkina Faso	Semus	Agripath partner
Burkina Faso	Ministry of Agriculture	Government
Burkina Faso	Provincial Department of Agriculture	Government
Burkina Faso	Provincial Department of Environment	Government
Burkina Faso	Association Monde Rural	NGO
Burkina Faso	Afrique Verte	NGO
Burkina Faso	Agribusiness TV	Private sector
India	Grameen India	Agripath partner
India	GIZ	Donor
India	GIZ	Donor
India	Ministry of Agriculture	Government
India	Digital Green	DAS
India	Dehaat	DAS
India	Ayekart	DAS
India	International Rice Research Institute	Research/university
India	Indian Council of Agricultural Research	Research/university
India	Mirzapur district level agriculture department	Government
Kenya	ICIPE	Agripath partner
Kenya	Learn.ink	Private sector
Kenya	Elewa	Agripath partner
Nepal	IDE global	Agripath partner
Panama	Farmbetter	Agripath partner
Switzerland	CDE	Agripath partner
Switzerland	University of Lausanne	Agripath partner
Switzerland	University of Kathmandu	Agripath partner
Tanzania	Kilimotrust Tanzania	Agripath partner
Uganda	Kilimotrust Uganda	Agripath partner
Uganda	Makerere University	Research/university
Uganda	Uganda Forum for Agricultural Advisory services	NGO
Uganda	M-Omulimisa	DAS