FROM INFORMED CONSENT TO DATA SHARING

DAC LEARNINGS 2024

DIGITAL AGRIFOOD COLLECTIVE

Introduction

In 2024, the Digital Agrifood Collective continued to explore the topic of data governance and informed consent, exploring whether the group could add a more practical learning perspective to this work by initiating scoping work for a data sharing pilot.

This learning product captures key insights from the 2024 process while introducing the work of DAC. For previous reports on DAC learnings and activities, please see its NFP Connects community webpage.

a.

Introduction to the Digital Agrifood Collective & its Goals

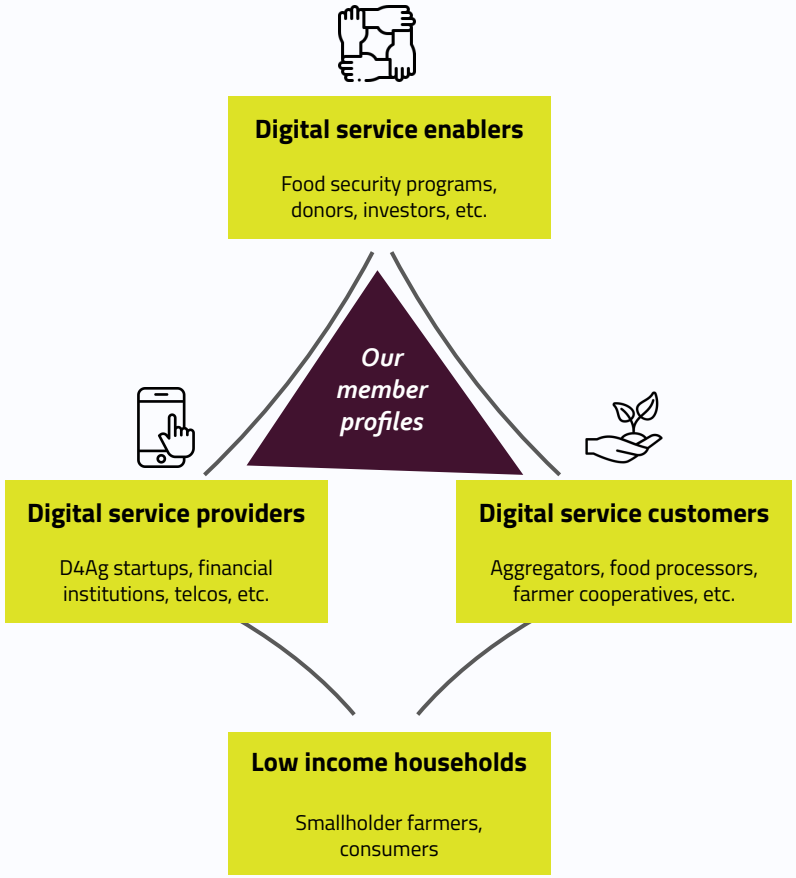
In this section we introduce you to the backdrop of the Digital Agrifood Collective (DAC), the membership profile and barriers to digitalisation we have previously focused on.

DAC

DIGITAL AGRIFOOD COLLECTIVE

Our mission

We are a collective of organisations that **exchange learnings and align strategies** with the purpose to collectively **accelerate an inclusive digital transformation** of the agrifood systems in Sub Saharan Africa and Southern Asia.



Since 2020, the DAC activities are coordinated by NFP bop inc

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How do we work?

Members join our ‘pledge-to-action sprints’ to collectively remove barriers for inclusive digital transformation of agrifood systems. Each sprint has three steps. In this publication we share the outcomes of the sessions that were organized in 2024, on data sharing and informed consent for smallholder farmers using digital services.

Sprint → **Learning** → **Pledge** → **Action**

Members exchange on:

What have we learned about data governance trends and informed consent in the context of agrifood systems?

Members agree on:

What principles and strategies do we commit to for improving data governance for smallholder farmers?

Members present:

How do we put our pledge into action, both within our own organisations as well as through member collaborations?

Our activities to date

Topics that we take action on collectively through pledge-to-action sprints:

Digital inclusion (2021-2023)

Commercial viability (2021-2022)

Data governance and informed consent (2023-2024)

User-centered design (not scheduled)

Demystifying overhyped technologies (not scheduled)

Local talent recruitment (not scheduled)

b.

About this Learning Publication

In this section we explain the structure of this publication, which covers the learnings, pledges and actions that we have explored as Digital Agrifood Collective in 2024.

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An adapted approach

In 2024 discussions with DAC members on how to approach the topic of informed consent and data sharing the group decided to divert from the pledge-to-action methodology. Members preferred to learn together and found that with existing guidance on ethical data governance there was no need for an additional pledge. Instead a move to explore potential for a practical pilot was added.

Sprint →  **Learning** →  **Call to action** →  **Pilot**

Learning	Call to action	Pilot
Members exchange on:	Members co-created:	Scope with DAC:
What have we learned about data governance trends and informed consent in the context of agrifood systems?	**What is the key problem that needs to be addressed? How can we learn more about how to address this?**	**Where are there opportunities to realize a practical pilot on consent and ethical data sharing?**

Our activities in 2024

Pilot training results workshop

In 2024 the DAC continued the work of 2023. After a pilot training with 3900 Kenyan farmers on informed consent, a follow up survey was done to understand its effects. The impacts of this training were discussed in with the DAC membership (see report).

Our activities in 2024

Call for a data sharing pilot

As a result of the workshop a call for a more practical pilot was created and sent out (read the call for use cases), to facilitate actual data sharing and learn from this. Based on this call, exploratory conversations were had with DAC partners to find interest and understand the relevance and potential of use cases.

Our activities in 2024

Community discussions

Meanwhile, a number of fundamental questions around balancing innovation for Agtech and ethical data sharing were shared and debated in an online discussion (see LinkedIn) as well as a panel discussion (view the recording).

c.

Key insights about Data Sharing & Informed Consent

In this section we contextualize the learning of 2024

Why data sharing?

- Digitized data on farmers, markets and the environment in which they operate can be a key enabler to address multiple challenges in agriculture through improved services.
- For farmers it can strengthen capacities, reduce cultivation cost, improve productivity and reduce vulnerability. It also enables input- and service providers to reach them better.
- Data driven services are dependent on the aggregation of data. Data sharing could therefore reduce the cost of these services by avoiding the duplication of data gathering. Further, more data would mean better models and solutions tailored to farmers. Finally, eased access to data would also reduce the cost of innovation in developing data driven services.
- For more information see the 2024 publication "Unlocking Data Sharing in Agriculture"

What follows are a few key insights on data sharing we gathered through the 2024 DAC work, before moving on to the lessons learned.

The value of farm level data

- Farmer / farm level data has value. Monetization of this data is one of the key drivers for digital innovation.
- The value of data is used to bring services to farmers, like crop and weather advisory, access to inputs or finance, or premium prices through traceability systems.
- To deliver on this value, data needs to be gathered. Either directly from the farmer, or collected and shared through third parties (eg. intermediaries, cooperatives).
- According to the World Bank, an average farm in 2014 generated 190.000 data points daily, citing expert predictions that by 2050 each farm produces 4.1 million data points daily.
- Some argue for a perspective that views this generation of data as a form of labour that can be compensated.

What kind of data is collected?

Data collection at farm level often includes the following basic data points. However to truly unlock the power of data, data collection often goes deeper.

Name
Age
Gender
ID Number
Phone Number
Location and size of farm
Animal types
Crops types
Yields over time

Personal data & anonymous data

To use data, it has to be gathered and shared. But once gathered, it does not mean a person loses ownership of the data per se.

As long as the data can be used to identify a person (or their farm) the data remains personal, and under most laws personal data is owned by the person identified.

When data is aggregated and anonymized so that farmers and farms cannot be identified any more, the ownership transfers to the data controller or processor (in most cases a company).

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Roles and responsibilities in data sharing

The EU GDPR identifies three roles dealing with data: the subject, controller and processor. This division is commonly used in other data governance laws.

- A **data subject** is anyone who can be identified as a (natural) person.
- A **data controller** determines the purposes and means of processing personal data. They decide why and how data is gathered, shared and processed.
- A **data processor** acts under the instructions of a data controller, processing personal data on their behalf.

For more information, see the EU Data Protection Guide for small business.

Data governance & informed consent

- Consent of farmers to gather and use their personal and farm level data is fundamental in data sharing business models.
- Increasingly, governments are regulating data flows, with legislation often inspired on EU GDPR and newer data acts.
    - 2024: Ethiopia passes data protection bill
    - 2024: Rwanda Data Protection Office creates guidance to comply with regulation on cross-border data transfers
    - 2024: AfCFTA passes protocol on free trade area for digital trade
- However, gathering informed consent poses a difficulty when companies try to bring new services to farmers who do not have access to smartphones. To gather consent they need to physically travel to the farmer, or use an intermediary to do this.

What is the challenge in data sharing?

- Currently, collection, use and governance of farmer data in agriculture is very fragmented. Farmers are burdened by multiple surveyors requesting the same data, while data on farmers is collected and stored across many different organizations. Hence, various organizations are working on interoperability of systems, and Digital Public Infrastructure.
- There is low digital literacy among farmers, rules and rights are complex and not well known, while businesses have to deal with evolving regulation.
- Quality of data is important for it to be useable, which means it needs to be cleaned, checked and updated regularly. This is a costly process if farmers do not have access to smartphones.
- There is need for a model where farmers access services under a single registration, instead of through many different accounts and applications, based on farmer centric data governance - such as the Farmer Centric Data Governance Principles developed by Maastricht University.

d.

Reflections, Lessons Learned, and Outputs from Workshops

In this section, we present our learning and reflections from DAC members during the workshops that were held.

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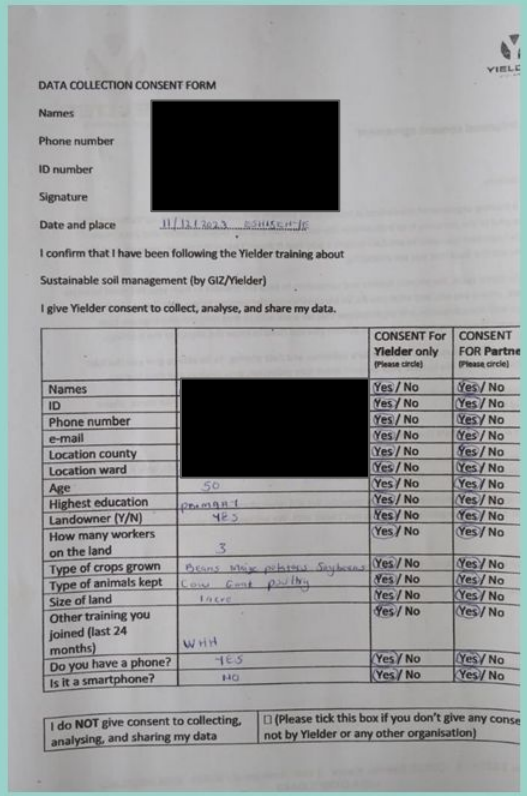
Informed consent training pilot

- In 2023 DAC picked a fundamental piece of the data sharing puzzle, (informed) farmer consent. DAC members co-created the content for a training which was piloted among 3900 Kenyan farmers by Yielder.
- The purpose of this pilot was see if a business case exists for more engagement with farmers on their data use and rights, specifically when looking to share the data to provide more services. To see if increased transparency and choice would lead to more consent.



DATA COLLECTION CONSENT FORM

Names [redacted]

Phone number

ID number

Signature

Date and place 11/12/2023 ESHIKSEMPE

I confirm that I have been following the Yielder training about

Sustainable soil management (by GIZ/Yielder)

I give Yielder consent to collect, analyse, and share my data.

		CONSENT For Yielder only (Please circle)	CONSENT FOR Partne (Please circle)
Names	[redacted]	Yes / No	Yes / No
ID		Yes / No	Yes / No
Phone number		Yes / No	Yes / No
e-mail		Yes / No	Yes / No
Location county		Yes / No	Yes / No
Location ward		Yes / No	Yes / No
Age	50	Yes / No	Yes / No
Highest education	primary	Yes / No	Yes / No
Landowner (Y/N)	YES	Yes / No	Yes / No
How many workers on the land	3	Yes / No	Yes / No
Type of crops grown	Beans Maize potatoes Soybeans	Yes / No	Yes / No
Type of animals kept	Cow Goat poultry	Yes / No	Yes / No
Size of land	1 acre	Yes / No	Yes / No
Other training you joined (last 24 months)	WHH	Yes / No	Yes / No
Do you have a phone?	YES	Yes / No	Yes / No
Is it a smartphone?	NO	Yes / No	Yes / No

I do NOT give consent to collecting, analysing, and sharing my data	☐ (Please tick this box if you don't give any conse not by Yielder or any other organisation)

Consent forms

- Trainers and trainees had to fill out the consent forms with personal details
- Trainers and trainees had to fill out what kind of consent they were giving (see illustration)
- And had to fill out to whom (Yielder and/or 3rd parties) they were giving consent

Lastly they could tick a box saying they would not give any consent

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Informed consent training pilot

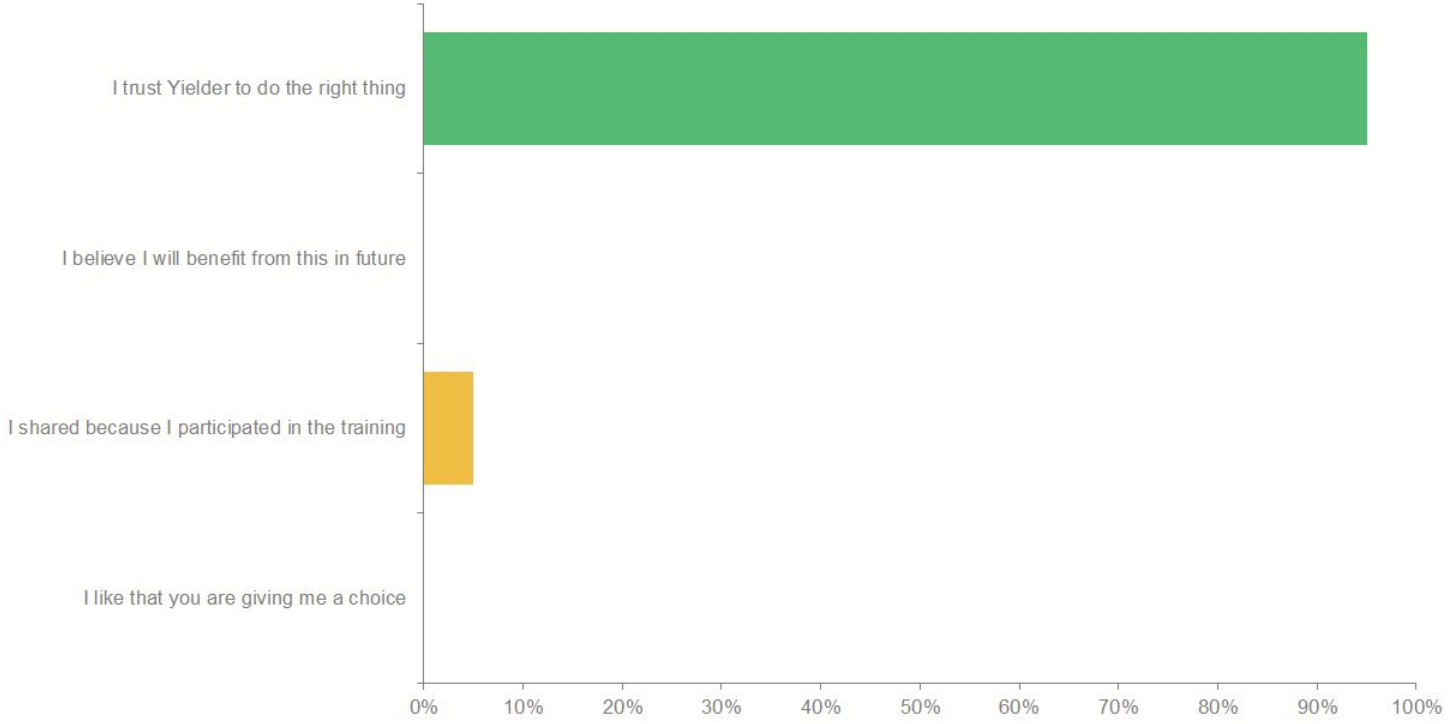
- Farmers were given a 30 minute training on how their data was gathered, used and protected in this case, and what their rights was. Giving them increased choice over what information was shared with whom through an extensive consent form.
- 70% of the farmers were given the training + consent form, while 30% were only given the consent form but no training.
- The outcomes of the pilot problematized the concept of informed consent.
- Initially it looked like more communication, choice and transparency did lead to more consent for sharing farmer data with third parties.
- However upon surveying 400 farmers after the trainings, as well as the trainers we saw that there was low interest in–and low understanding of–the topic.

Outcome of the training and the (informed) consent

consent forms review					
			to Yielder	to 3rd parties	
received training	gave consent	95%	100%	73%	
received training	no consent	5%			
total		100%			
no training	gave consent	65%	100%	63%	
no training	no consent	35%			
total		100%			

Q20: What motivates you to share your data?

- Answered: 60 Skipped: 339



Informed consent training pilot

Results of the survey and conversations with trainers showed that:

- Farmers lost interest when there was no concrete benefit to sharing their data.
- It seems the farmers mainly followed the lead and suggestion of the trainers. Where there was more communication about data sharing, there was more consent, but without understanding or interest in choice about what data was shared with whom.
- Only 3% of farmers opted to fill in something other than only yes or no to all choices in the form.

Our preliminary conclusion from this experiment: trust in a company and trainer (intermediary) is more important than information and transparency in determining the outcome (yes or no), which reveals a big responsibility of intermediaries.

- To get more clarity about the relevance of these outcomes, DAC members suggested to initiate a follow up pilot where actual data was shared to deliver actual benefits to see if this leads to different results.

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Balancing Data Protection and AgTech Innovation

To contextualize some of this work in the broader discussion ongoing in the Agtech and development sectors the DAC also organized a panel discussion where experts from business, government, civil society and research dove deeper into this topic.

Specifically, the discussion explored the trends in data protection among governments and donors, and how that reflected in the practice of business and civil society.

The webinar featured two presentations:

- One by a compliance expert and researcher on data protection that explained key concepts and current trends.
- Another by an AgTech company, showing how they generate informed consent in their application.

The panel discussed whether these developments found the right balance to allow for both innovation through use of data and protection through governance.

Watch the webinar recording here.

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Balancing Data Protection and AgTech Innovation

Key insights from that discussion included:

- Governments and donors have increased attention for data protection and privacy, resulting in regulation and increased contractual obligations.
- Governments try to protect the rights of data subjects while trying to play an enabling role, making sure that data is available for use for impactful initiatives. Creating digital public infrastructure is an important avenue to achieve this.
- We assume the data concerns for a person in the EU are the same as those in rural Africa, which may not be the case. Farmers in rural Africa have more pressing concerns than what happens with their data, digital literacy is low.
- There is a need and demand from farmers to facilitate access to digital services, regulation should not be prohibitive to that. Principles for Digital Development can guide.
- It may be interesting to explore alternatives to individual consent in the African context, for instance through well informed community leadership.

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Models for gathering informed consent

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Models

During our exploration to realize a pilot in 2024 on how data sharing can be realized through farmer-centric models, we came across three standard models through which farmers interact with organizations gathering (and potentially sharing) their data. These models show how consent is gathered and services delivered through an intermediary, which is crucial if farmers do not have access to smartphones themselves.

We identify: the **Agent** model, the **Cooperative** model and the **Representative** model.

In what follows we explain these models and show practical examples of how businesses operate with these models: how they generate informed consent, what services are delivered, with whom data is shared and who pays for the business costs of delivering the services.

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Agent model

Agents. An intermediary that connects to farmers on behalf of a company or organization. They form the linking pin that collects the necessary data on a farmer to offer them a service. Via the agent, the data is entered into the IT system of the company who then are the **data controller**.

The intermediary may be on the payroll of the company, or receive a fee on the basis of services delivered. In the latter case these agents are **data processors** on behalf of the company.

Examples are an agricultural extension officer, a surveyor or an agripreneur.

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Case: Agent model

Kuza works with youth, women, and small business owners to support agriculture through entrepreneurship, refining services based on user feedback.

Kuza complies with Kenyan data protection laws and follows GDPR standards. Consent is obtained through standard consent forms and verbal explanations, delivered by **trained mentors** to ensure farmers fully understand the process. Farmer participation in data sharing is voluntary.

Kuza offers **customizable tailored services**, including crop advisory, access to inputs, credit, and markets.

Data is self-reported, anonymized, and aggregated. It is **shared on request** by agripreneurs through **accessible formats**, such as Tik Tok videos, and with commissioning partners funding the training programs to demonstrate outcomes.

Kuza operates on a **client-funded model**, where partners commission customized training programs for specific groups of farmers in designated regions.

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Cooperative model

Cooperatives. A collective organization of farmers where some resources are pooled, and that acts on their behalf to negotiate for access to services, products, markets and better prices. These cooperatives may opt to gather and pool data resources, forming what is called a **data cooperative**.

By both determining the purpose for—and means through which—data is collected, data cooperatives act as a **data controller**. Data cooperatives may gather farmer data themselves, meaning they would also be a **data processor**, or choose to outsource this process.

DAC

Case: Cooperative model

JoinData

JoinData is a non-profit cooperative providing an independent data platform that empowers farmers to control and share their data securely.

Join data complies with GDPR standards and is ISO 27001 certified. In addition to standard consent forms, JoinData provides **accessible resources for farmers**, such as YouTube videos and an FAQ page, to inform themselves further.

JoinData offers a **secure and transparent platform** for farmers to manage and share their data.

Data is shared via JoinData's secure digital data highway, ensuring **only authorized data** requests are processed.

JoinData operates as a **member-based cooperative**, where agricultural businesses and organizations join to facilitate secure data sharing. Farmers pay a fee to use the platform.

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Representative model

Representatives. An authority figure in a community that may be elected, who is delegated the responsibility of facilitating the interaction between farmers and service providers.

Like an agent, this person acts as a linking pin that helps farmers to access specific services and/or takes decisions about the use of farmer data. Representatives are **data processors**. They act on behalf of companies or other organizations who are the **data controller**.

Examples include lead farmers, or community chiefs.

DAC

Case: Representative model

AUXFIN

AUXFIN provides groups of farmers with services and information on tablets supported by a local agents network prioritizing community building and mutual trust.

AUXFIN complies with GDPR standards. Consent is obtained through forms and supplemented through **explanations by Key Activators** and **local language** videos.

AUXFIN offers a **range of services**, including agricultural and livelihood coaching, financial and market services through the UMVA platform.

AUXFIN's **multifaceted business model** includes service commissions, farmer licences, and grants.

Data is collected from **transactions, apps, and digital surveys** by the UMVA platform. Data is user-owned and only shared directly with third parties to enable the desired services desired by the user, such as banking functionalities. Anonymous data may be shared when it benefits the user groups.

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Future ambitions

Follow up pilot

- Based on the discussions and learnings of 2024 we will continue to explore in particular the role monetization of data can play in helping to digitize cooperatives.
- At the basis of this work lies the question: Are there business models that can realize the potential of farmer data to digitize and facilitate access to digital services for farmer cooperatives in Africa, similar to the model of JoinData? How can these models be realized sustainably?
- This exploration will start from the pilot problem statement drawn up with the DAC in 2024.

Piloting problem statement 2024

The collection, use, and governance of farmer data in the agriculture sector are currently very fragmented. A multitude of businesses and NGOs are independently gathering and managing farmer information, which is quickly out of date and needs to be kept clean - resulting in substantial resource expenditures.

Farmers, meanwhile, are burdened by multiple surveyors requesting the same data and various organisations employing different applications to collect this information for their services. This is further complicated by diverse governance models, leading to farmers being repeatedly asked to give consent for the use of this data under complex terms.

This fragmentation and inefficiency not only creates frustration but also hinders the potential for streamlined, effective agricultural support systems.

North star for the DAC pilot exploration 2024

The sector needs to move to a model where farmers receive easy, streamlined access to services under a single registration that applies a farmer centric data governance approach. This model should allow organisations to share and re-use data between partners for service delivery - leaving the ownership of the data with farmers.

While the realization of more top-down Digital Public Infrastructure is still in its infancy, data cooperatives may be another bottom-up, collective model to achieve this.

Data cooperatives

- JoinData: Dutch data sharing cooperative

No need to re-invent the wheel, toolkits are available, important to standardize to promote inter-operability of data systems

- CABI Data Sharing Toolkit
- Rabobank Field Data Quality Enhancement toolkit for cooperatives in global value chains

Learning Questions

- What are business models that have potential to succeed?
- Is the value of data big enough for a business model to digitize cooperatives not in export value chains?
- Who should / will pay for the needed IT systems and infrastructure in a data cooperative: farmers or service providers / buyers?