



# Innovations for data-sharing in agricultural partnerships



White paper | March 2022

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## **Executive summary**

This white paper aims to highlight the importance of innovation in data sharing in the context of partnerships between financial institutions and agricultural value chain players. These partnerships represent a compelling model for integrating multiple critical services that smallholder farmers need, hence creating opportunities to improve farm productivity, performance and profitability.

In principle, sharing data within a partnership could allow both partners to improve their shared offering to farmers. But financial institutions guard their data closely, for legal and security reasons, while agricultural value chain players consider their last-mile farmer data a prized asset. Sharing and integrating data can support new product innovation, customer adoption and engagement and scale-up, amongst other benefits, but incentives and mechanisms for sharing data in the right way are hard to come by.

In the context of these partnerships, data is a source of challenges and opportunities. Some of the critical data sharing challenges faced in these partnerships include data actionability, data and digital capacity, data regulations and policies, access to technology, behavior change and confidentiality and trust, amongst others.

In an effort to understand opportunities in data sharing arrangements, we collaborated with Barry Callebaut and Advans Côte d'Ivoire, who decided 3 years ago to combine their efforts and actions to reduce poverty in the cocoa value chain. Through our Innovation Launchpad approach, we prioritized 2 opportunities for an improved data-sharing model: 1) improving farmer onboarding, through improved data standards and integration of data systems; and 2) improving cooperative due diligence, through better use of available data and streamlining of the infield data collection process.

In the context of the first opportunity, we describe a set of concepts involving new data standards which they commit to respect and automated connections between their respective data systems. In the context of the second opportunity, we describe a set of concepts involving design and implementation of a new data collection template and a new cooperative segmentation model to streamline credit scoring.

We conclude with considerations related to the implementation of these concepts, including a phased roadmap, roles, responsibilities and risks, as well as reflections on the Innovation Launchpad approach.



# 01 Purpose

**The advent of digital platforms and tools has created new opportunities for many organizations to better utilize their resources in improving the lives of smallholder farmers.** These organizations, sitting across the private, public and social sectors, are now in a position to tweak their offerings and business models over time in the pursuit of better ways to support the many needs of farmers.

Across these sectors, partnerships with like-minded organizations are emerging as a key means to bring a broader set of offerings to farmers, with the aim of addressing their needs more comprehensively. In particular, partnerships between financial institutions and agricultural value chain players represent a compelling model for integrating multiple critical services that farmers need.

Financial institutions include traditional institutions such as commercial and microfinance banks, and a rapidly growing landscape of innovative fintech start-ups. They directly impact farmers' financial lives by offering mechanisms for savings, credit and insurance that are legal and regulated.

Meanwhile, private sector agricultural value chain players, including input providers, off-takers, aggregators, processors and agtech innovators also hold a privileged position. These organizations are directly involved in agricultural activities, serving and supporting farmers in a variety of ways which ultimately influence farm productivity, performance and profitability.

**Hence there seems to be clear merit in combining their strengths in mutually reinforcing ways. Yet these categories of actors are often quite different in their business models, practices and cultures, limiting the development of partnerships.** Creating sustainable partnerships may seem simple between organizations with offerings that are complementary and non-overlapping, but in practice challenges abound.

In particular, the challenges of sharing data are notable. Organizations have long recognized the importance of data in their own business activities. For example, better use of data can help organizations develop ideas for new products and services, refine their current product portfolio, communicate to farmers more effectively, and optimize go-to-market strategies. In principle, sharing data within a partnership could allow both partners to improve their shared offering to farmers.

But financial institutions guard their data closely, for legal and security reasons, while agricultural value chain players consider their last-mile farmer data a prized asset. Sharing and integrating data can support new product innovation, customer adoption and engagement and scale-up, amongst other benefits, but incentives and mechanisms for sharing data in the right way are hard to come by.

**At IDH, we use our Innovation Launchpads to engage partners using a design thinking approach to solve specific technology challenges. We link our partners with a diverse group of experts to help improve digital products and make them commercially viable.** We recently used this approach to explore innovative data sharing approaches in the context of a three-year old partnership between Barry Callebaut and Advans Côte d'Ivoire in the cocoa sector.

Through this white paper, we aim to share learnings from this Innovation Launchpad we conducted on data challenges with Barry Callebaut and Advans. We hope these learnings will inspire financial institutions and agricultural value chain players to explore creative approaches to the range of data challenges they face, and donors and funders to invest further in supporting the types of solutions that emerge.

## APPROACH

### *About IDH's innovation launchpad approach*

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We conducted a 3-day launchpad with teams from Advans, Barry Callebaut and IDH and a panel of 3 experts, facilitated by Dalberg Design. The Innovation Launchpad approach is based on design thinking principles, using participatory approaches with diverse team members to inspire fresh thinking and co-design solutions. We facilitated each workshop in English and French to ensure engagement from all participants.

Design thinking and related methodologies are increasingly being used across the development sector, including in agriculture and financial inclusion, to align diverse stakeholders, inject creative thinking and co-create plans for implementation and action. We see strong potential in applying these approaches to data-driven challenges.

Data-driven challenges typically require diverse partners, with their own interests and agendas, to co-design solutions that incentivize sharing and engagement with data outputs over time. The participatory nature of a design thinking approach, which seeks to create a safe and structured space for conversation, problem-solving and risk-taking, helps partners to converge ideas into final concepts that can be developed further.

Data-driven challenges may also require specialized expertise to take new concepts to a level of detail that can be implemented. Outside experts can be valuable to this process, to bring in technical expertise and perspectives from other contexts to spark new thinking. Innovation Launchpads aim to create a level playing field amongst all participants, ensuring everyone can participate equally. In the context of data-driven challenges, technology experts, operational experts and data experts from other sectors can all help push thinking further.

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### ○ Acknowledgments

We would like to acknowledge and thank the numerous individuals who helped advance our understanding and ideas through the Innovation Launchpad we conducted in March 2021:

**From Advans:** Albert Dah, Amin Hamidi, Audrey Joubert, Celine Koffi, Christian Kabran, Elise Perrin, Heloise Trouilleux, Inoussa Kone, Marie-Prisca Ngounadi, Yacouba Kone

**From Barry Callebaut:** Johannes Stryckers, Nicolas Mounard

**Our experts:** Christophe Bocquet from Dalberg Data Insights, Dr. Kunal Malhotra from a leading healthcare organization, Nzau Muinde at Mastercard

**From IDH:** Ankur Seth, Lisa Minère

**From Dalberg Design:** Ravi Chhatpar, Mandé Mory Bah

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## 02 Context

### 2.1 - The emergence of new partnerships between financial institutions and agricultural value chain players

Despite significant expansion and innovation in the rural agricultural finance sector, in 2019 up to 70% of the global demand of rural households for finance - or USD 170 billion – was unmet<sup>1</sup>. Over the last few years, the sector has been motivated by an expanding recognition of the need for more holistic service offerings to farmers.

Financial service providers have acknowledged that finance is not an end itself. Instead, financial services can better impact farmers' lives if they are able to facilitate access to value-added products and services that help with access to inputs, education, irrigation, mechanization, access to storage, market linkages and supply chain management. With this in mind, an increasing number of rural agricultural financial service providers have been looking for ways to broaden their service offering.

Establishing partnerships with other rural service providers operating across the agricultural ecosystem is viewed as a key means to do so. These agricultural value chain players are often embedded in farmer communities, have trusted relationships with lead farmers, coops, agrovets and other influencers, and are closely attuned to the specific challenges farmers are facing in any given season or location.

While rural agricultural finance services appreciate the importance of tailoring their model to the reality of agriculture value chains, for example by aligning with the production cycle of a given crop, they are also increasingly sensitive to the wide variations that exist in needs, behaviors and preferences amongst the rural customer base. Many financial institutions see partnerships with agricultural

value chain players as a way to help them deepen their understanding, allowing them to offer more tailored products that meet farmers' needs and that support their agricultural behaviors. They also directly engage with other agricultural value chain players to access and leverage their infrastructure, networks and data.

This interest in integrating financial services and agricultural products and services is mutual. Value chain players also see strong potential in these partnerships. They are keenly aware of the financial pressures that farmers continuously face, but have limited ability to offer financial products or services through their own offerings and channels. They may refer certain farmers to financial institutions or offer guidance on how to make use of informal mechanisms such as savings groups, but their model typically avoids including financial solutions. The trusted role they hold with farmers allows them to serve as a gateway to offering the right financial solutions that truly meet farmer needs, assuming a financial institution can provide one.

<sup>1</sup> [The Rural and Agricultural Finance Learning Lab, 2019, Pathways to Prosperity, Rural and Agricultural Finance, State of the Sector Report](#)

In this recent journey of partnership development between the agricultural finance sector and rural service providers, data plays a critical role. To help customize their services, the agricultural finance sector has been seeking ways to expand access to and usage of farmer data. Data-sharing solutions, whether lower-tech mechanisms for data exchange (such as emailed files or manual data entry from paper forms), or more sophisticated data platforms or hubs, help catalyze the partnership and enable the bundling of value-added services with financial services.

These partnerships also generate and offer a wealth of data on farmers, some of which is new to either or both parties. Such data can be used by the financial service providers to acquire new customers, tailor their services (including through improved credit scoring), deliver these services more efficiently and better monitor a portfolio of services across customers. This data can similarly be used by rural service providers to understand farmers' financial needs and challenges in a more nuanced way.

In the context of these partnerships, data is a source of challenges and opportunities. Some of the critical data sharing challenges faced in these partnerships include:

**Data actionability** – In this context, we define data actionability as the capacity of the receiving party to leverage the data for its intended purpose (e.g., contacting a potential client). In some cases, the shared data is not actionable, usually due to issues related to accessibility, relevance, quality or interoperability.

**Data and digital capacity** – To enable the sharing of data between two organizations, there is a need for appropriate data and digital capacity from both the sharing and receiving sides. While certain organizations still accept sharing data via email, an increasing number of organizations use more advanced technologies for data protection reasons, which require greater technical skills and experience.

**Access to technology** – Similar to the challenges related to data and digital capacity, data sharing also requires access to certain technologies – both hardware and software – mostly depending on the amount and nature of data to share, frequency of sharing and level of security and protection required.

**Behavior change** – Data sharing between two organizations usually requires new rules, processes, or technologies which must be adopted by both parties to make the partnership successful. Such innovations might be disruptive for some staff and require behavior change.

**Confidentiality and trust** – Due to the potential sensitive nature (e.g., for privacy or strategic reasons) of the data shared between two organizations, it is critical for all parties to build trust in the partnership, including compliance with defined protocols related to the usage and management of the shared data. For organizations of different sizes, with different resources, or coming from different backgrounds, this can be challenging.

# 03 Introducing Barry Callebaut and Advans, our Innovation Launchpad partners

About

**ADVANS**

The Advans Group is a leading international microfinance group, currently serving clients in nine countries: Cambodia, Cameroon, Ghana, Democratic Republic of Congo, Côte d'Ivoire, Pakistan, Nigeria, Tunisia and Myanmar. From micro loans to SME loans to current accounts, savings plans, insurance and transfers, Advans aims to offer small businesses and other clients tailored financial services to help them grow their businesses and achieve their professional or personal goals.

About

**BARRY CALLEBAUT**

Barry Callebaut is a leading manufacturer of high-quality chocolate and cocoa products. They serve the entire food industry, from industrial food manufacturers to artisanal and professional users of chocolate, such as chocolatiers, pastry chefs, bakers, hotels, restaurants or caterers. They have a long-standing commitment to sustainability, believing that the future of the industry depends on its ability to make cocoa farming more viable and attractive to farmers. They are committed to make sustainable chocolate the norm by 2025 to help ensure future supplies of cocoa and improve farmer livelihoods.

For this Innovation Launchpad, we collaborated with Barry Callebaut and Advans Côte d'Ivoire. These 2 organizations decided 3 years ago to combine their efforts and actions to reduce poverty in the cocoa value chain. In this period, they designed a productivity package loan which enables them to offer more than 20,000 farmers access to individual coaching, high quality inputs and savings accounts, helping them to increase their productivity, enhance their financial management and improve their livelihoods. Both Barry Callebaut and Advans are committed as organizations to tackle the biggest sustainability challenges of the cocoa value chain, and have therefore committed to scaling up their existing partnership to reach 190,000 farmers by 2024.

They both believe in the power of data as a key lever to help them achieve their ambitions. Barry Callebaut's model involves usage of a farmer business plan app that helps farmers estimate their outputs and plan activities around

10-year horizons. They collect extensive data about farmers' cocoa farming practices, all of which supports the contracting and provision of productivity packages of inputs and technical assistance provided to farmers. Advans' account opening process involves collection of data at the coop level, including data on activities of their farmers, by their agents.

Over the course of the last 3 years, Barry Callebaut and Advans have developed a data-sharing model organically, using and evolving a range of simple processes and technologies to help their internal teams make better use of the rich data they jointly collect. While this approach has been working thus far, they see challenges in scaling up. Specifically, the current data collection and sharing process results in redundancies which directly impacts processing time and cost of the productivity package. To reach more farmers efficiently, key linkages across the data-processing flow will need to get optimized.

We prioritized 2 main opportunities for an improved data-sharing model, which formed the foundation of the Launchpad:

1. Improving farmer onboarding, through improved data standards and integration of data systems
2. Improving cooperative due diligence, through better use of available data and streamlining of the infield data collection process

Improving farmer onboarding and cooperative due diligence could reduce operational costs and mitigate risks, which in turn reduce costs for farmers. Over time, such an approach could also help them better understand farmers' financial needs and repayment capacity, informing the design of tailored packages adapted to each segment of farmers while also managing risks across their farmer portfolio. It could also inspire other types of financial product innovation, such as diversification loans or insurance products, or delivery through lower-cost digital channels.



# 04 Opportunity 1:

## Improving farmer onboarding

### 4.1 Current process

During the farmer onboarding process, Barry Callebaut sends a list of farmers selected for availing the productivity package to Advans. Advans registers new farmers in their system to be able to provide them with financial services, such as a bank account for savings and receiving loans. The onboarding of new farmers requires different data from the farmers (e.g., name, age, gender, etc.) which are usually manually collected during in-person meetings.



### 4.2 Challenges

Barry Callebaut and Advans face several challenges that suggest an opportunity for stronger integration between their data systems, as well as adoption of new common data standards. The main challenges highlighted during the Launchpad primarily relate to the efficiency and time needed for various steps of the farmer onboarding process:

**Quality of data**, as names, phone numbers and national ID numbers are inconsistently captured.

**Redundancy of data**, as Barry Callebaut already has some information about farmers in their systems.

**Extraction and sharing** of the required data with the counterpart.

**Merging** of the received farmer dataset from Barry Callebaut with Advans' existing farmer data.

**Integration** of the received data in the master data systems from the receiving party.

Based on the challenges we identified, we collaboratively generated and prioritized two innovations to facilitate data collection, usage and sharing.

# 1

## New data standards

Barry Callebaut and Advans agree on new standards which they commit to respect when collecting, storing, processing and sharing their data.

### Key features

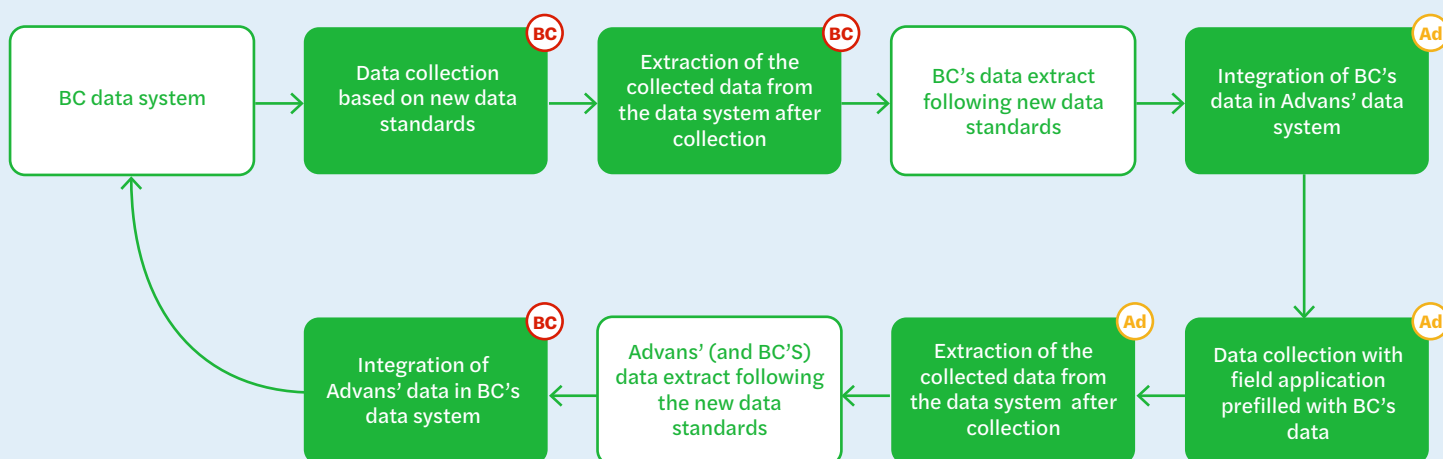
Those data standards enable both organizations to agree on (i) the definition of key data elements such as a common unique identifier for the registered farmers; (ii) the type and format of the data corresponding those data elements; as well as (iii) data quality standards specific to those elements.

### Value proposition

The new data standards will enable both Advans and Barry Callebaut to (i) save time when reconciling datasets coming from the two organizations, (ii) improve data quality over time, and (iii) facilitate the integration of the shared data in both master data systems.

### Operational model

With these new standards, at the beginning of the season, Barry Callebaut can start collecting data on farmers following the rules and definitions which have been agreed upon with Advans. Once the data is collected by Barry Callebaut, it is shared with Advans who will use that data for its farmer onboarding process. Advans will integrate the data in its data system so that the onboarding field application can be prefilled with Barry Callebaut's data. Advans' field agents can then onboard farmers with the prefilled field application, complementing the data which has already been collected by Barry Callebaut. After collection, the data is extracted from Advans' data system and reported back to Barry Callebaut who will eventually reintegrate back into their own system.



#### KEY

Data	Barry Callebaut
Data activity	Advans

## 2

## Integration of data systems

Barry Callebaut and Advans plan to establish automated connections between their respective data systems.

### Key features

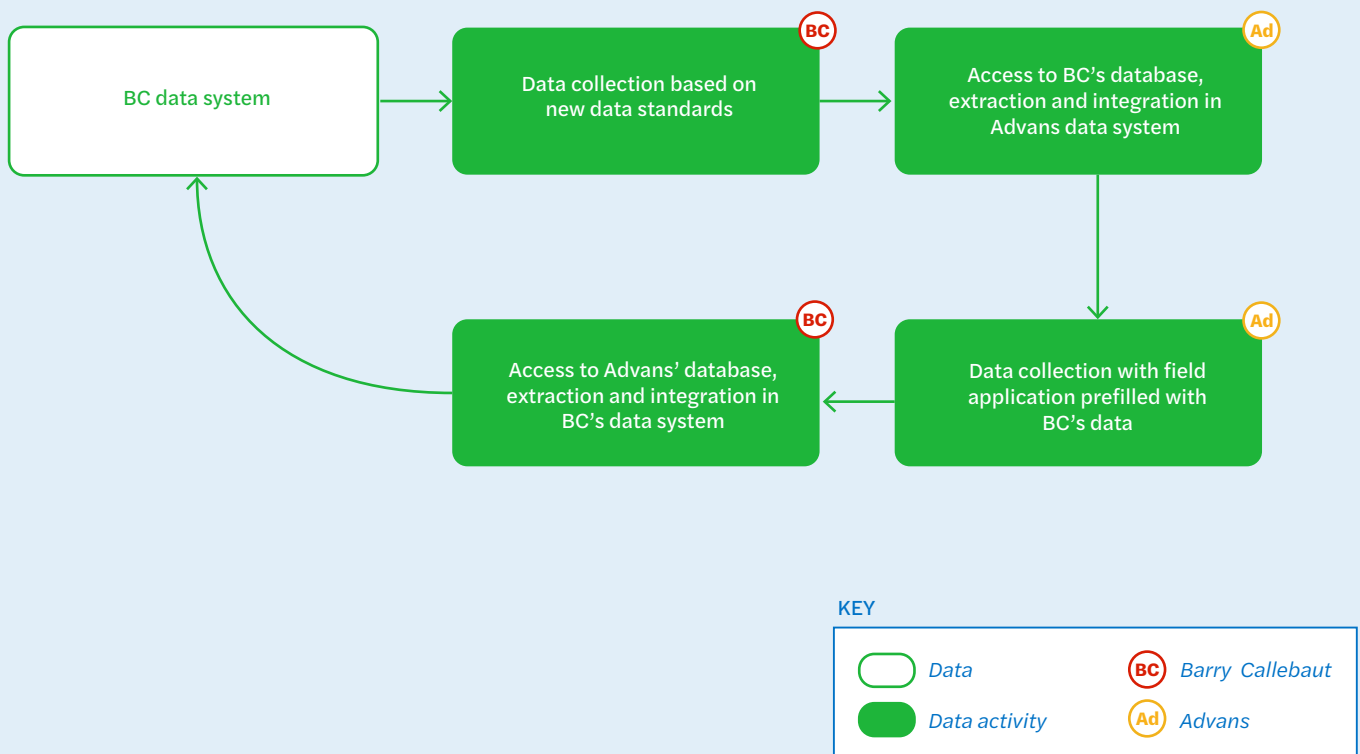
These new automated connections will leverage direct database accesses in a first instance before evolving towards integration of the data systems based on APIs.

### Value proposition

Due to the integration of the data systems, the last version of the data can be accessed at any point in time without the involvement of the other party who owns and manages the data. Additionally, data sharing and usage are more secure and transparent, and administrators of the databases retain control over access to the data.

### Operational model

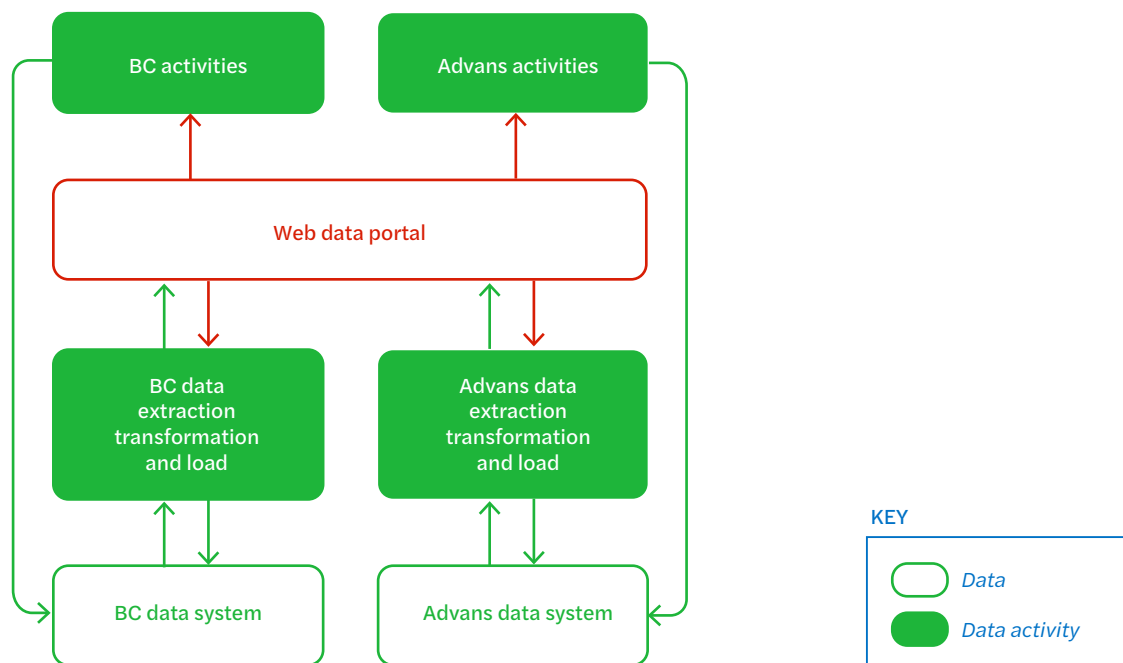
The overall process is very similar to the one previously described apart from the way data is shared and integrated between data systems. In this case, there is no need to pass by a manual extraction and integration of the data as those steps are replaced by automated connections between respective data systems. Such setup requires perfect alignment on common data standards resulting in similar configurations in both data systems which enables flawless communication between them.



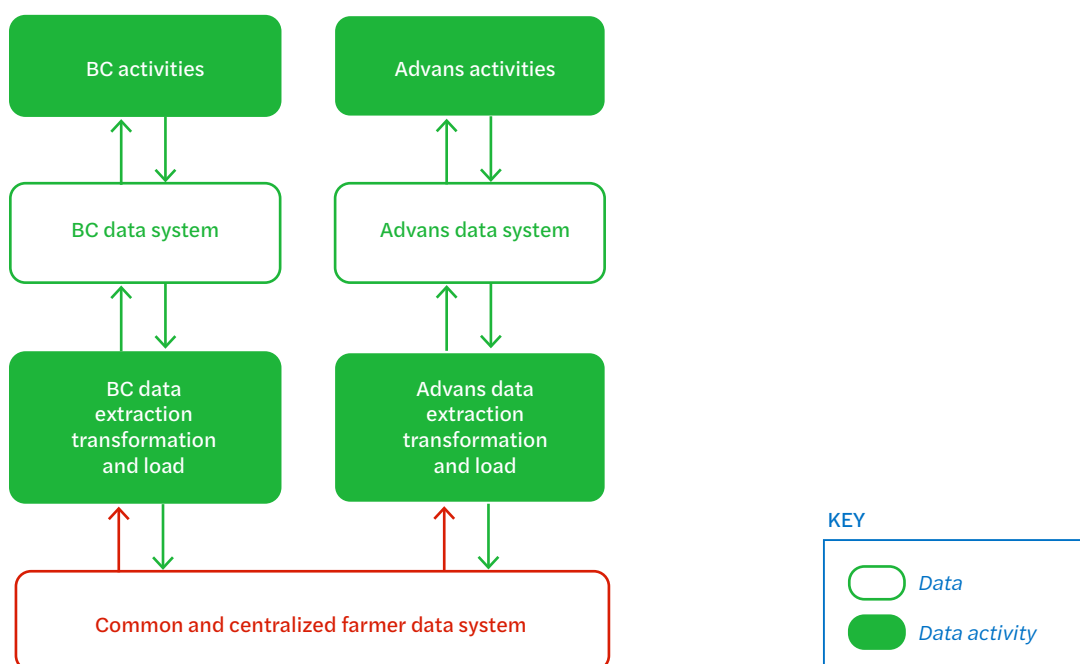
In addition to these recommended concepts, we also explored additional ideas during the ideation sessions of the Launchpad. However, we deprioritized further exploration of these ideas in our co-design sessions, as we determined that the innovations described above would be easier to implement, and that these additional concepts would necessitate more significant shifts in each partners' technology organizations and processes.

These additional concepts include:

**3. Sharing data via a web portal** – To facilitate the data sharing between Advans and Barry Callebaut, their partnership could develop a web data portal connected to their respective data systems. The portal could be updated in near real-time and used by both organisations to access the data from their counterpart without the need of database management skills. The databases on both Barry Callebaut and Advans would still need to be managed and configured to connect with this online web portal.



**4. Centralized farmer database, common and shared between Advans and Barry Callebaut** – Finally, another opportunity that could be considered by Advans and Barry Callebaut to boost their data sharing would be to build a common and centralized farmer and cooperative data system. This system would become the single-source-of-truth for all the data related to farmers and cooperatives.



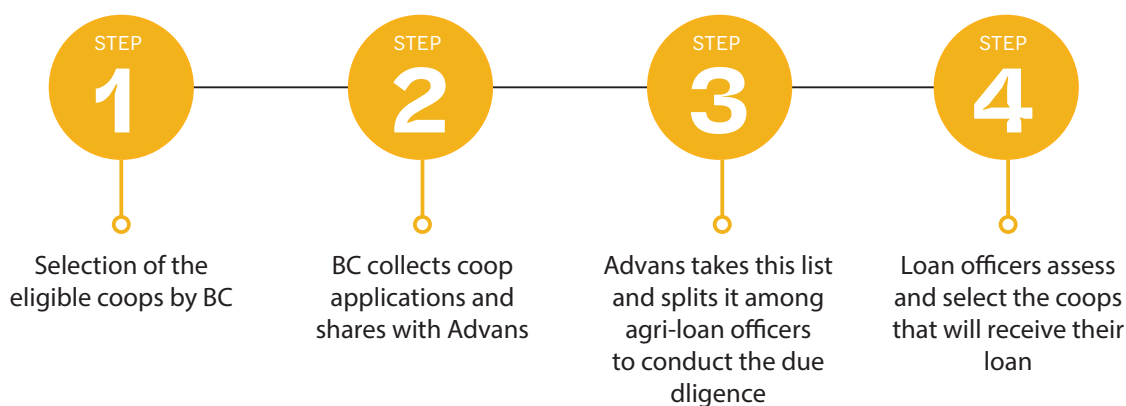


# 05 Opportunity 2:

## Improving cooperative due diligence

### 5.1 Current process

The cooperative due diligence process consists of a qualitative and quantitative analysis of farmers' cooperatives to assess the suitability of the loan they have applied for. Here as well, Advans requires information that has already been collected by Barry Callebaut for their own operations, and in addition to information they collect themselves. A data sharing process is already in place between both organizations but there is a shared will to make it more efficient.



### 5.2 Challenges

Barry Callebaut and Advans face several challenges that suggest an opportunity for stronger integration between their data systems, as well as new common data standards. The main challenges highlighted during the Launchpad primarily relate to the efficiency and time needed for various steps of the cooperative due diligence process:

**Lack of digital data about cooperatives, and low usability of available data,** requiring additional primary data collection from cooperatives by Barry Callebaut for Advans.

**Inefficient data sharing and reconciliation** of the datasets coming from both organizations.

**Burdensome assessment** of the cooperatives' ability to repay the loan they applied for, given the depth of qualitative and quantitative information needed to make an informed assessment.

Based on the challenges we identified, we collaboratively generated and prioritized two innovations to facilitate their data collection, usage and sharing.

# 1

## Structured data collection template

Barry Callebaut and Advans will collaborate to design and implement a new data collection template.

### Key features

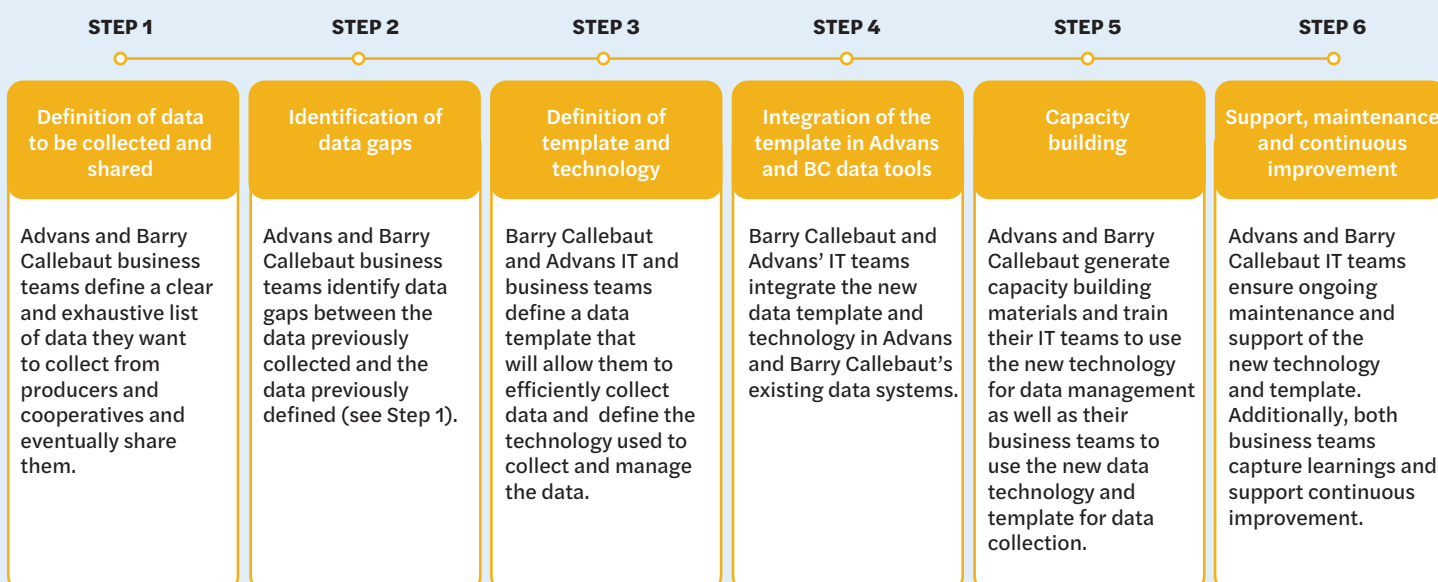
The template would draw on (i) shared lists of fields to collect for the due diligence; (ii) shared definition and format for those fields; as well as (iii) adapted technologies to enable data collection and management according to the new data collection template.

### Value proposition

Such a new way of collecting and managing due diligence data would increase data quality and eventually reduce both (i) the time required for the overall due diligence process as well as (ii) the loan default rate.

### Operational model

In order to implement the new data collection template, Barry Callebaut and Advans plan to collaborate in a six-step approach starting from (i) the definition of the data to collect and share leading to (ii) the identification of the data gaps, (iii) informing the definition of a new template, before (iv) its integration in Advans and Barry Callebaut's data tools, requiring (v) capacity building, as well as (vi) longer-term support, maintenance, and continuous improvement.



## 2

### New coop segments and assessment

Advans will aim to establish a segmentation of the cooperatives applying for a loan and adapting the segmentation according to well-defined thresholds, reducing the number of data points to analyze for certain cooperatives.

#### Key features

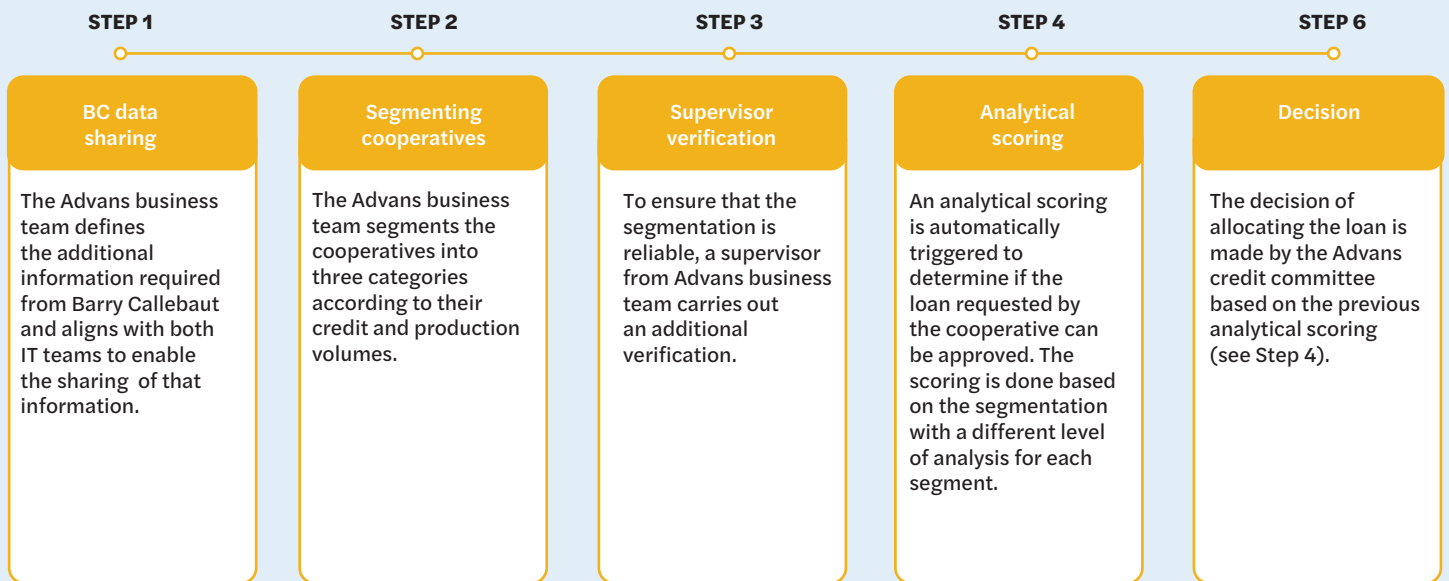
The due diligence process would be tailored to cooperative segments defined by selected information such as (i) the volume of the credit required by the cooperative; (ii) the total cocoa production of the cooperative; and (iii) previous loan and repayment history of the cooperative with Advans.

#### Value proposition

Such a new methodology would accelerate the overall due diligence as certain reports from the cooperatives, which used to be reviewed and analyzed for each cooperative, will be ignored for the most trustworthy cooperatives.

#### Operational model

In order to implement the new segments and assessment, the partners will join forces in a five-step process starting with (i) data sharing from Barry Callebaut, used to (ii) segment the cooperatives including a (iii) verification of the segmentation, before (iv) running an analytical scoring of the cooperatives, leading to (v) the final due diligence decision.



As with the first opportunity, we also explored additional ideas during the ideation sessions of the Launchpad. For the same reason, we deprioritized further exploration of these ideas, as we determined that the innovations described above would be easier to implement, and that these additional concepts would themselves be dependent on success of the initial innovations.

These additional concepts include:

**3.Strengthening the model for credit scoring of cooperatives**

– In the future, Advans could further leverage its loan portfolio history to score cooperatives even more accurately during the due diligence. Such a data-driven model could potentially reduce the default rate of the cooperatives. Examples of interesting solutions leveraging machine learning algorithms to measure risk in agriculture include FarmDrive, Apollo Agriculture and Pula. These companies usually combine data collected in person with big datasets such as satellite images and weather data.

**4. Improved data quality at the cooperative level**

– To improve the quality of the data collected by Advans and Barry Callebaut at the cooperative level, as well as to reduce their data collection time, both organizations could help cooperatives to digitize their data collection and management. Examples of vendors offering interesting solutions to collect farm or cooperative-level data (e.g., farmer profile, GPS coordinates of the plots, farm management records, etc.) include Metajua, CropIn, Farmforce and eProd.



# 06 Roadmap for the recommended concepts

After identifying and co-designing the recommended concepts in detail, we turned our attention to considerations related to their actual implementation. These formed the basis for a proposed roadmap, structured as follows:

**Sequence of activities and estimated duration** – For the four aforementioned innovations, a three-phase framework has been used to envision their establishment. Each will start with a design phase, followed by a piloting phase, and finishing with a deployment phase. The piloting phase includes activities to capture learnings and support the improvement of the innovation design before starting the larger scale deployment. Additionally, both the piloting and deployment phases build on training of the staff who will have to leverage the innovation. Finally, it was agreed that those innovations can be implemented in about six months, starting with the creation of new data standards before adapting the due diligence and further integrating the data systems.

DESIGN PHASE	DEVELOPMENT AND PILOT PHASE	IMPLEMENTATION PHASE
<p><i>Activities for the improvement of both farmer onboarding and cooperative due diligence.</i></p> <ul style="list-style-type: none"><li>- Identify list of data points to be collected from farmers and cooperatives and eventually shared with the other party</li><li>- Define data standards and policies to follow during the whole data value chain of the onboarding and due diligence processes</li><li>- Design new data sharing mechanisms and processes</li><li>- Align with the respective IT teams on the technical requirements for the adoption of the new data standards and data collection template</li></ul>	<p><i>Activities for the improvement of both farmer onboarding and cooperative due diligence.</i></p> <ul style="list-style-type: none"><li>- Adapt Advans and Barry Callebaut's data systems to enable adoption of new data standards, data collection templates, data, policies and data sharing mechanisms and processes</li><li>- Train the staff who will be piloting those new templates, standards, policies and sharing approaches</li><li>- Pilot the innovations with a subset of farmers and cooperatives and capture learnings from the pilot</li></ul>	<p><i>Activities for the improvement of both farmer onboarding and cooperative due diligence.</i></p> <ul style="list-style-type: none"><li>- Based on the learnings from pilot, deploy the new standards, templates, policies, mechanisms, and processes to all cooperative due diligences and farmer onboardings</li><li>- Extensively train Barry Callebaut and Advans staff</li><li>- Pilot the innovations with a subset of farmers</li><li>- Continuously capture learnings and improve the new technologies processes</li></ul>

**Roles and responsibilities** – Two main teams from Advans and Barry Callebaut will be involved to successfully implement the recommended concepts. The IT teams will drive the technical development of the innovations, ensuring secure and efficient integration with the existing data systems on both sides. The business teams will lead the design of the innovations as well as their operational deployment, including training and capacity building.

**Risks and mitigations** – The Innovation Launchpad particularly emphasized data governance. As Advans and Barry Callebaut aim to strengthen their partnership through enhanced data collection and management over time, the partnership will require a shared data governance structure to embrace ongoing changes in terms of common data standards and data-driven processes. Some of the tools which have been discussed in order to ensure appropriate data governance include: (i) clear definition of data management roles and responsibilities in both organizations; (ii) establishment of data policies to safeguard data quality, security, privacy and ethics in light of national and organizational data regulations; (iii) structured identification of risks related to data and implementation of processes ensuring compliance with the established data policies; (iv) deployment of communication mechanisms to foster adoption of new rules and standards in terms of data.

## 07 Reflections and closing

This section provides some forward-looking considerations related to the data-driven partnerships between agribusinesses and financial institutions as well as the application of Innovation Launchpads to foster establishment of such partnerships and innovation in that field.

It is clear that agribusinesses and financial institutions can benefit from one another and have strong incentives to partner. On the one hand, smallholder farmers usually need finance – especially at the beginning of the growing season – to be able to access services and products from agribusinesses. On the other hand, agribusinesses can offer an infrastructure and network of both agents and potential customers as well as critical information about them.

We believe that such partnerships will become the new norm when it comes to providing financial services customized to the farmers living in the most rural areas and who have been usually left behind. Additionally, it is likely for many of these partnerships that digital technologies and platforms will increasingly play a catalyzing role by facilitating (i) the match and identification of respective haves and needs, (ii) the offering of bundled services, (iii) the sharing of some operating costs and (iv) the sharing or reduction of risk.

While many financial institutions and agribusinesses are experiencing some form of digital transformation, the penetration and adoption of digital technologies – including smartphones and mobile internet – in the smallholder farmers community has been low, although is expected to grow rapidly in the coming years. Additionally, the growing demand for traceability – especially for the exported commodities – will further drive digitalization and data collection in the agriculture sector. These trends will lead to an increased availability of data on farmers and broader agriculture value chains as well as more opportunities to anchor agricultural partnerships around data sharing.

This data will enable rural service providers to (i) have more targeted customer acquisition, (ii) refine the design of their products and services by better understanding their users and customers, as well as (iii) improve their service and product delivery. At the same time, data sharing can also result in data misuse (e.g., misclassification of farmers due to misunderstanding of their production data), negatively impacting especially the more vulnerable communities including subsistence smallholder farmers. In that respect, the implementation of data governance strategies in those future partnerships will be critical to ensure data security, privacy, and ethics.

The Innovation Launchpad approach continues our experimentation with using design thinking methodologies to explore emerging technology challenges in smallholder agriculture. For the data sharing challenges we explored here, we found that the participatory nature of the process, as well as the structured design sprint agenda with guided exercises, worked well to encourage engagement by all stakeholders including the launchpad partners and the external experts, who brought valuable outsider perspectives.

At the same time, data sharing ideas and solutions will always be fairly technical. The pre-sprint activities to map existing data flows, the side consultations during the sprint to understand the nuances of certain data processes, and the post-sprint synthesis to refine concepts to a level of a detail appropriate for implementation were significant, and necessary.

We remain optimistic that we can continue to apply these methods to foster greater collaboration and uncover innovative solutions to the most pressing challenges faced by smallholder farmers.



