



Towards demand-driven services? The role of feedback mechanisms in agribusiness-based advisory services for smallholder farmers

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Abstract: *In many developing countries, agribusinesses are highly engaged in providing services to smallholder farmers, including agricultural advisory services or extension. As private service providers depend on farmers' choice, eliciting farmer feedback and learning from farmers' demands seem to become more important. However, the phenomenon of agribusiness-based advisory services has received relatively little attention in the study of advisory services. Little is known on whether and how agribusinesses operationalize the idea of demand-driven service provision. This is a critical oversight as agribusinesses are increasingly present as service providers and hence shape the prevailing service landscape for smallholder farmers. Based on a study of 29 agribusinesses providing advisory services to farmers in developing countries, this paper explores the extent to which agribusinesses provide demand-driven services based on farmer feedback and how they integrate and learn from such feedback.*

Keywords: agribusinesses, agricultural advisory services, smallholder farmers, feedback systems

Introduction

IN THE LAST FEW DECADES, the private, for-profit sector has emerged as a relevant actor in service provision to small and medium-sized farmers in low- and middle-income countries, alongside 'traditional' public extension (Feder et al., 2011; Zhou and Babu, 2015). Agribusinesses, which are companies involved in input supply, producing or selling farm products, have become deeply engaged in delivering agricultural advisory or extension services beyond their immediate core business.

Two main reasons are commonly identified to explain the rise of private companies in agricultural service provision in developing countries. On the one hand, public programmes to support smallholder farmers have declined, which has triggered an active move towards involving private companies to reduce gaps in service provision (e.g. Wiggins et al., 2010). On the other hand, the transformation

of the agri-food industry has created new opportunities and incentives for private companies to engage with smallholder farmers and invest in their production (Bright and Seville, 2010).

Private, for-profit extension services are commonly assumed to be more demand-driven than traditional public extension services (Swanson and Rajalathi, 2010). The latter have often been criticized for rendering farmers passive recipients of agricultural technology promoted by extension and research, with disappointing results manifest in low adoption rates and limited progress in productivity increases (Sulaiman and Hall, 2002; Anderson, 2007). While the shortcomings of one-way communication systems have long been recognized in agricultural service provision and much change has been promoted in rhetoric, recent studies suggest that public extension continues to lack structured feedback mechanisms between farmers and service providers (Ragasa and Niu, 2017). This increases the risk that public extension services do not meet farmers' needs, which contributes to the often-mentioned low quality services (Anderson, 2007).

Agribusinesses, in contrast, may face competition from other service providers and are dependent on farmers' choice, which attaches more importance to the provision of demand-driven services (Zhou and Babu, 2015). For instance, for input suppliers, the quality and relevance of their advisory services are major determinants of brand reputation and market share (Ferroni and Zhou, 2012). If farmers do not value the services offered, company sales and hence company profits are at risk. Similarly, companies that source from smallholder farmers depend on the willingness of farmers to sell them their produce, which increases their incentives for user feedback loops to improve service delivery. Obtaining feedback has been shown to make advisory services more attractive to farmers and increase demand for these services (Jones and Kondylis, 2016).

At the same time, critics argue that input suppliers merely push sales regardless of farmers' real interests and needs (Ferroni and Zhou, 2012). Others argue that private services, due to the high technical demands of agribusinesses, are prone to offer top-down, expert-defined packages of practices which, firstly, can only be adopted by the most advanced segment of farmers and, secondly, do not take into consideration the perspectives and experiences of farmers (e.g. Glover, 2007). Swanson and Rajalathi (2010) argue that private sector firms primarily disseminate production innovations, but are not engaged in other agricultural extension activities to intensify and diversify farming systems. Finally, researchers question the accountability of private agribusiness to farmers, arguing that private services may have no more incentives to establish two-way communication systems than public services (Feder et al., 2011).

This raises the question of whether private services are actually more demand-driven than traditional public services, by means of eliciting and using farmer feedback. Knowledge on this issue is scarce so far. This is because the phenomenon of agribusiness-based advisory services is relatively recent (IDH, 2016) and only a few, mostly single-case studies have paid attention to this kind of service delivery (Zhou and Babu, 2015). Little work has been done to systematically document the diversity and complexity of emerging private sector extension activities,

or to explore their implications for service delivery and performance (Gomez et al., 2016).

Based on a study of 29 agribusinesses providing agricultural services to farmers in different developing countries, this paper therefore explores how agribusinesses operationalize the notion of demand-driven services based on farmer feedback and how they integrate and learn from such farmer feedback. We here include feedback on service needs (farmer demands for services), service quality and delivery (usefulness of information, delivery mechanism, and quality of products), and effects of service delivery (adoption). This serves to contribute to the debate on private advisory services in developing countries in search of best practice to improve service delivery to smallholder farmers (IDH, 2016; Donovan et al., 2017).

Conceptual approach

Beneficiary feedback as an emerging practice in international development

'Feedback systems' can be understood as systematic approaches to collecting the views of beneficiaries or clients about the quality and impact of a specific intervention, for the purpose of improving or evaluating interventions and holding to account the organizations that implement them (Jacobs, 2010; World Vision et al., 2016). Feedback is thus closely related to the concept of participatory monitoring and evaluation (Estrella and Gaventa, 1998) and social accountability (Ringold et al., 2012) in international development.

Over the last two decades, feedback systems have become increasingly important in international development in order to focus on beneficiaries' priorities and increase impact (Groves, 2015). Monitoring how well activities are being implemented based on beneficiary feedback generates important information which allows organizations to manage and respond to major risks to impact of development projects. The process of generating feedback can also be inherently empowering, privileging the views of less powerful people and enabling their participation in development projects (Jacobs, 2010).

However, in practice, establishing meaningful feedback systems is challenging. For instance, World Vision et al. (2016) explored through a multi-country pilot what makes a beneficiary feedback system effective, and whether it improves accountability or the delivery of development programmes. They found that feedback loops were mostly closed at project level, there was limited use of feedback higher up the aid delivery chain, and feedback did not inform upward accountability to the donor. Another challenge that Groves (2015) describes is that beneficiaries often remain mere data providers, rather than having a role in the design, data validation, analysis, and communication of the feedback. Finally, the study by World Vision et al. (2016) emphasizes how beneficiaries may not have the confidence or the trust to engage in feedback systems, which requires sensitization of target beneficiaries to the purpose and process of giving feedback.

Feedback in agricultural advisory services: more than 'just' participatory approaches?

In the field of agricultural advisory services, recent decades have seen a gradual shift to bottom-up and participatory approaches to service delivery. This is intended to stimulate the co-creation of knowledge and to increase the relevance of the services, hence farmers' adoption of the recommendations (Swanson and Rajalathi, 2010). Indeed, it seems that farmers' learning is enhanced by a two-way communication style between farmers and extension providers (Sewell et al., 2017). Furthermore, much of the learning process happens at the community level, with farmers learning from each other and exchanging traditional knowledge (Swanson and Rajalathi, 2010). Feola and Binder (2010) argue that understanding of feedback processes and dynamics is a main requirement for understanding farmer behaviour because it acknowledges that farmers learn from past behaviour, adapt to changing conditions, and are innovative in finding new practices as ways to manage risks. Establishing feedback systems between extension agents and farmers can also create incentives to focus on local priorities and needs, rather than top-down planning, which has repeatedly proven to have limited impact (Bitzer, 2016). Studies have shown that giving farmers a mechanism to provide feedback on services can increase engagement and adoption of new technologies (e.g. Jones and Kondylis, 2016). In a recent study on extension in Rwanda, Jones and Kondylis (2016) found that feedback tools help sustain demand for services among current clients and increase demand among non-users. Women farmers in particular were identified as reacting positively to feedback mechanisms, which suggests that feedback can increase the inclusiveness of agricultural services. Moreover, being able to demonstrate the satisfaction of farmers can also be a way to increase the recognition of the extension agent's work (Bitzer, 2016).

Despite the progress in understanding, participatory extension methods as a way to obtain farmer feedback are far from being institutionalized (Anderson, 2007; Ragasa and Niu, 2017), while other means for farmers' feedback on the content and quality of services delivered are hardly practised (Jacobs, 2010). Anderson (2007) describes the lack of two-way feedback between farmers and extension providers as detrimental to extension effectiveness. As information available to agents may not correspond with the problems faced by farmers, there is no understanding of the constraints and potentials of the farming system to determine relevant technologies and technology development requirements.

Of the few studies that deal with feedback in agricultural service provision, most of them look at public extension. When it comes to private advisory services, there is a daunting gap in the literature, to the best of our knowledge. Studies suggest that farmer feedback should be more relevant for private service providers, as service delivery is tied to the business model. This makes farmers' demand and choice for such private services essential, possibly even for organizational survival (Chipeta et al., 2008). Wongtschowski et al. (2013: 148), for instance, argue that 'where clients pay directly for services, or where they contribute part of the cost, accountability tends to be much less problematic, as the client has a direct say on what service is provided, and what he or she thinks of it.'

However, private service delivery does not automatically imply that farmers (i.e. 'clients') actually have a voice, as clients' power may be undermined when a monopoly situation exists with little or no choice of service providers (Feder et al., 2011). Changing service providers may also be too costly or not an option at all, especially when farmers are seen as passive recipients of whatever the service provider is willing to offer (Wongtschowski et al., 2016). Furthermore, farmers often do not pay for advisory services by private companies (Gomez et al., 2016), which further reduces their ability to influence service provision. How private providers of agricultural advisory services, such as agribusinesses, operationalize the notion of 'demand-driven', and what role feedback systems play in this, is therefore far from clear-cut.

Case selection and methods

This paper is based on a joint learning trajectory on agribusiness-based advisory services between KIT Royal Tropical Institute, Agriterra, Moyee Coffee, and the Food & Business Knowledge Platform from September 2017 to May 2018. While KIT was the facilitating actor in charge of research activities, all partners were involved in identifying the research questions, case selection, and information gathering. The overall results of the learning trajectory have been published in van Veldhuizen et al. (2018).

For the empirical analysis of agribusiness-based advisory services in developing countries, case selection was based on purposeful sampling (i.e. looking for information-rich cases) and on the ease of access to key informants and secondary information. We excluded cases where private services were tied to externally funded public-private partnerships, and only selected cases where service provision was part of the regular operations of agribusinesses. In total, 29 cases were selected, grouped in three categories: internal cases, external cases and cases from the literature (see Table 1).

For the 21 internal and external cases, we reviewed existing reports and documents and interviewed at least one key informant per case for additional information. Often, this was done in two rounds, with the second interview reserved for follow-up questions and deeper analysis of particularly relevant or innovative experiences. A two-week field visit by one of the authors to Kenya and Uganda enabled additional data collection through staff interviews and field observations on six external cases. An overview of all 29 cases can be found in Table 2.

Table 1 Case categories

<i>Case category</i>	<i>Explanation</i>	<i>Cases selected</i>
Internal cases	Cases related to the partners of the learning trajectory (primary data)	8
External cases	Cases included in the analysis through interviews (primary data)	13
Literature cases	Cases included in the analysis based on existing documentation (secondary data)	8

Table 2 Overview of cases

<i>Company name</i>	<i>Country</i>	<i>Type</i>	<i>Product/crop</i>
<i>External cases</i>			
1 Bindzu	Mozambique	Input supply	Horticulture
2 Caravela Coffee	Colombia and other	Sourcing	Coffee
3 Frigoken Ltd ²	Kenya	Sourcing+	Horticulture
4 Heineken	Ethiopia, Burundi	Sourcing	Sorghum, rice, maize, barley
5 Kenya Highland Seed ²	Kenya	Input supply	Horticulture
6 Meru Greens ²	Kenya	Sourcing+	Horticulture
7 N-Agro	Nepal	Input supply+	Horticulture
8 Real IPM ²	Kenya	Input supply	Crop protection
9 Rijkzwaan	Tanzania	Input supply	Horticulture
10 SEKEM	Egypt	Sourcing	Food, textiles, pharmaceuticals
11 Sidai Africa ¹	Kenya	Input supply	Dairy
12 Tata Chemicals: Tata Kisan Sansar	India	Input supply	Fertilizer
13 United Organic Coffee Growers ^{1,2}	Uganda	Sourcing (FOB)	Coffee
<i>Internal cases</i>			
14 BAMSCOS ¹	Kenya	Sourcing+	Dairy
15 CEIBO ¹	Bolivia	Sourcing	Cocoa
16 DADTCO	Mozambique	Sourcing	Cassava
17 District Agricultural Co-operatives Federation ¹	Nepal	Sourcing	Horticulture
18 ForFarmers	Netherlands	Input supply	Dairy
19 Moyee Coffee	Ethiopia	Sourcing	Coffee
20 Mukurwe-Ini ¹	Kenya	Sourcing+	Dairy
21 Suiker Unie ¹	Netherlands	Sourcing+	Sugar beets
<i>Literature cases</i>			
22 EID Parry	India	Sourcing+	Sugar
23 Jain IS	India	Sourcing+	Onion
24 Kenya Horticulture Exporters	Kenya	Sourcing	Horticulture
25 Loc Troi Group	Vietnam	Input supply	Crop protection
26 Multi-Trex Integrate Foods	Nigeria	Sourcing	Cocoa
27 Rio de Una	Brazil	Sourcing	Horticulture
28 Sarveshar	India	Sourcing	Rice
29 Syngenta	Nicaragua	Input supply	Horticulture & crop protection

Notes: ¹ Farmer-owned enterprise

² Field visit included

Sourcing+ Companies focused on sourcing produce but also providing inputs to farmers.

Input supply+ Companies focused on supplying inputs but also sourcing produce from farmers.

Agribusiness-based advisory services in practice

Types of agribusinesses providing services to farmers

We group agribusinesses providing advisory services into two general types: services provided by input suppliers and services provided by sourcing companies, based on the position of agribusinesses in the supply chain relative to producers. Some companies do both, but always with a main interest in one of these two activities. In our sample, 12 companies are sourcing companies, 7 companies focus on sourcing but also provide inputs, 9 companies are input suppliers, and 1 company is an input supplier with additional sourcing activities.

Input suppliers include companies (e.g. agro-dealers) that sell a product to farmers (e.g. seeds, fertilizer, pesticides) and offer advisory services to ensure that farmers use their products correctly and remain loyal to the brand. The potential for increased sales is thus a main motivation for service provision. Interviewed agribusinesses also mentioned that a deeper understanding of which products worked well for which farmers and why, was another important benefit generated by advisory services, which helps them focus their business activities (e.g. focus on certain product lines). Finally, input companies can share information and offer technical assistance to increase farm productivity and profitability gains for farmers (Gomez et al., 2016). This, in turn, raises farmer income and power to purchase the agribusiness's products.

Sourcing companies include agro-marketing and processing firms (off-takers or intermediate bulkers), which source commodities from farmers and carry out value addition (drying, packaging, processing, marketing). Farmer-owned enterprises (e.g. cooperatives) are also considered sourcing companies in this study. The purpose of delivering advisory services is ensuring consistency in quantity and quality of the produce they collect. Sourcing companies benefit through an increase in the volume of produce sourced. This is particularly important in sectors such as dairy and sugar-cane, as processing often requires a certain volume to be cost-effective. Where products are perishable, a relevant purpose of advisory services is also to reduce the time needed to source a certain quantity. Finally, another important factor is that advisory services lead to improved quality of the produce, particularly when sold to markets with specific requirements. The motivation for sourcing companies to invest in extension services is enhanced when farmers are compelled by contract to sell their harvest to the company providing advisory support (Gomez et al., 2016).

Basic setup of agribusiness-based advisory services

Only five agribusinesses looked at in this study contract a third party to provide services to farmers on their behalf. A clear majority of companies studied have established their own service delivery capacity and provide advisory services themselves.

Most advisory services by agribusinesses focus on the technical aspects of production, including post-harvest management and record-keeping for certification, by means of

demonstration sites, farmer field days, and group-based training. Some agribusinesses also include wider concerns such as environmental issues, food safety, and health aspects, mostly as part of their own concern with the issue. Funding for services comes out of regular agribusiness operations, with costs being absorbed through a margin on the price of products sold to farmers, in the case of input suppliers, or integrated into the purchase price by sourcing companies.

All agribusinesses in this study work with farmers who have moved out of subsistence farming. About half of the agribusinesses indicated that they specifically target smallholder farmers. The understanding of what a smallholder is varies by context, ranging from 0.5 ha (United Organic Coffee Growers in Uganda) to up to 10 ha (Caravela Coffee in Colombia). On the other hand, SEKEM in Egypt works with farmers they refer to as medium sized, with 1–4.5 ha. Most of the remaining agribusinesses stated that they do not reach out to or target a specific farmer category. Instead, the nature of the product sourced or sold and the contextual conditions are most relevant in determining who the agribusinesses engage with.

Similarly, agribusinesses do not specifically address either men or women farmers. Unless agribusinesses are involved in externally funded projects, women's involvement in their services depends primarily on whether women are actively involved in production (prior to the agribusinesses' activities) and on socio-economic factors, such as migration of men.

In terms of the field staff–farmer ratio, considerable differences could be observed between the cases (Table 3).

Agribusinesses sourcing organic produce and agribusinesses in the export-oriented horticulture sector often have staff-intensive systems, with fewer than 200 farmers per advisor. The need to meet quality standards in these cases means that close interaction with farmers is necessary, and the relatively high value of the produce sold makes this ratio possible.

By contrast, many – but not all – input supply agribusinesses and three agribusinesses that have organized their agricultural service provision relatively recently have high numbers of farmers (more than 500) per advisor. Agribusinesses that delegate advisory tasks to lead farmers – farmers who are trained and are then supposed to share their new knowledge with other farmers – also tend to have higher ratios. It is these factors rather than the commodity or sector of interest to the agribusiness that appear to determine the field officer–farmer ratio.

Table 3 Field officer–farmer ratio

<i>Field officer–farmer ratio</i>	<i>Number of cases</i>
<49	5
50–199	9
200–499	3
>500	7
No information	5

Feedback and learning from farmers

Indirect feedback mechanisms and missed opportunities for organizational learning

Our findings suggest that all agribusinesses studied are very much aware of the importance of collecting farmer-level data and information and of assessing farmers' response to their advisory services. However, the mechanisms used by agribusinesses and the potential for organizational learning vary. A broad distinction can be made between 'direct feedback' (when information is obtained from farmers with the main aim of understanding their views on the advisory services delivered) and 'indirect feedback' (when information collected from farmers for other purposes is used to analyse service performance).

Direct feedback can be obtained through a formal system of regular collection or informal communication. Out of the 29 agribusinesses studied, only one regularly evaluates its advisory services with farmers. In the CEIBO cooperative in Bolivia, field officers generate feedback from farmers during field visits, the quality control system for farmers' produce is used as a second feedback mechanism, and the delivery and costs of services are evaluated with farmers during quarterly cooperative meetings.

Many other agribusinesses rely on informal communication between field officers and farmers – often lead farmers – during field days and training events to monitor their advisory services. Farmers' feedback is then 'kept' in the heads of field staff or in their notebooks. However, the agribusinesses interviewed indicated that it is challenging to analyse and learn from the information because of the unstructured nature of direct feedback. Only a few agribusinesses therefore make an attempt to learn from field officers' (oral) reports, such as Kenya Highland Seeds, which organizes monthly meetings of field staff to discuss their feedback.

By contrast, indirect feedback mechanisms play a much more important role for agribusinesses. Sourcing companies primarily collect data on the volume and quality of produce obtained from farmers. This is important information as it determines the prices paid to farmers. In addition, about half of the sourcing companies also conduct short farmer surveys at the end of a season, focusing mainly on technical aspects of production. Agribusinesses sourcing organic or otherwise certified products also need to collect detailed information on farmers' compliance with certification requirements.

The sourcing companies interviewed suggested that this type of information – mostly data on volume, quality, and, where applicable, farmer compliance – provides them with evidence on the effectiveness of their services. Effectiveness in this regard is understood as increased volumes and quality of produce delivered by farmers. However, volumes sold to agribusinesses may also increase for other reasons, such as reduced sales to other buyers. This presents a clear limitation to the value of these indicators. The data also does not explain the reasons for improved agronomic practices observed, including how these link with the agribusinesses' service provision. Hence, organizational learning remains limited.

Similarly, input supply companies rely on indirect feedback. They regularly collect data on volumes of products sold to farmers and, less frequently, on reasons for

(lack of) product uptake. This is part of sales administration or sometimes carried out through focused client surveys. The information collected can be an indicator of the effectiveness of advisory services, as it provides insights into the uptake and appreciation of seed varieties, fertilizers, and other inputs. It does not reveal, however, whether farmers use such inputs properly, and which knowledge gaps they still encounter. In the case of specific problems, for example with the uptake of a new product, input suppliers sometimes collect information to better understand whether such problems are caused by the product itself, for example unsuitability to a specific context, or by incorrect usage by farmers. Organizational learning is thus focused on which products work for farmers, rather than on the quality and content of the advisory services provided to farmers (e.g. how farmers are trained to utilize a specific product).

The only time that direct feedback on service quality was explicitly mentioned by agribusinesses was when they operated projects with third party co-funding with additional development objectives linked to service provision. This requires companies to comply with different monitoring and reporting requirements. While five companies were involved in such projects and conducted farmer surveys, only two companies (one sourcing company and one input supplier) paid specific attention to service delivery, asking for and analysing farmers' views on service content and approach. The three other companies merely used the farmer surveys for indirect feedback on service provision, limiting their questions to technical issues, such as product use and agricultural yields. This could suggest that the agribusinesses involved did not consider the surveys to be sufficiently relevant to include them in their non-project activities.

Barriers to enhanced feedback

Our findings show that the agribusinesses studied do not engage in comprehensive feedback processes with farmers on their advisory services. Instead they mostly rely on informal direct feedback from farmers on an ad hoc basis, and on indirect feedback through sales and product data. Use of the information collected focuses primarily on the immediate core business of the company and hardly comprises an analysis of their advisory services. Several partially interrelated barriers seem to play a role in preventing agribusiness from engaging more in-depth in feedback processes.

First, agribusinesses emphasized that the main purpose of their service delivery is to achieve their business objectives rather than serving the needs of farmers. For input suppliers, the main benefit lies in increased sales of products to farmers, while sourcing companies primarily benefit through an increase in the volume and quality of produce sourced. This also makes farmer feedback on service quality secondary, compared with technical data such as volumes sourced.

Second, agribusinesses seem to have clear assumptions about farmer needs. Our results show that all agribusinesses work with farmers who have moved out of subsistence. According to the agribusinesses, these farmers have the capacity to supply markets, but lack the required technical skills. This explains the focus

of advisory services on the technical aspects of production, for instance, through demonstration sites, farmer group training, field days, and individual visits. Other service needs, such as farm business management, mechanization, and sustainable natural resource management (Gomez et al., 2016), seem to be either considered secondary or are not recognized at all.

Third, agribusinesses' assumptions also play a role with regard to technology adoption, that is, how farmers engage with and use practices that are promoted by advisory services. When asked about why farmers sometimes do not apply new practices after receiving training and other types of exposure, agribusinesses displayed two reactions. About half of them, especially input suppliers, indicated that non-adoption may be caused by financial or other constraints (e.g. labour) by farmers. The other half suggested that farmers may be unwilling to accept new practices, for instance, because of risks involved. Hardly any of the agribusinesses connected low adoption rates by farmers to the quality and effectiveness of their advisory services. As such, agribusinesses do not appear to perceive potential non-adoption as a learning opportunity for their service provision.

Fourth, agribusinesses do not incentivize field officers to collect feedback from farmers, as service needs are assumed to be understood and service provision centres on these perceived needs. If field advisers are provided with clear incentives, they focus on product or crop-related targets. In the case of input suppliers, field officers have sales targets, connected with a certain number of mandatory farmer visits, which make them eligible for bonus payments. For sourcing companies, many of them offer bonus payments to their field staff based on the volumes and quality of farmers' produce received.

Finally, agribusinesses indicated that they make relatively little use of information and communication technology (ICT) to reach farmers. While they recognized that such tools would allow for more regular collection of feedback, many of the agribusinesses studied stated that the limited access to and skills in using mobile devices on the part of farmers represent a significant barrier to working more with ICT.

Discussion

Farmer feedback and the effectiveness of agribusiness-based advisory services

Improving advisory services following farmer feedback can support agribusinesses' core operations by means of increasing farmer engagement (loyalty), improved farming practices and use of new technologies, and, ultimately, uptake of new products sold by input suppliers and/or supply of more and better quality products to sourcing companies (Zhou and Babu, 2015; Gomez et al., 2016; IDH, 2016). In addition, feedback mechanisms can serve to identify ways to raise farmer satisfaction and sales, which in turn increases the recognition of the field officers' work and enhances their intrinsic motivation to perform (Bitzer, 2016).

At the same time, generating feedback has costs, both in terms of finances and staff time of field officers. As Jacobs (2010) recognizes, costs of feedback systems often outweigh the perceived benefits, so any efforts to increase the role of farmer

feedback should consider different ways of cost reduction. As a first step, our results indicate that systematic feedback from farmers should become part of the internal agenda of the company and part of their service delivery model. A relatively simple way of doing so could be by reviewing existing monitoring and evaluation tools to identify where and how questions related to service delivery satisfaction (e.g. in surveys) could be integrated without much effort and cost.

Beyond the formal monitoring and evaluation systems, field staff already collect a lot of relevant information during visits and informal discussions with farmers. Field staff should be rewarded for this behaviour, but agribusinesses should also create a space for analysing and acting on this information to ensure organizational benefits from feedback.

Recent developments in ICT software can help to capture knowledge derived both informally and formally and can serve to reduce feedback costs per farmer reached, in spite of the initial investment required. The use of ICT is currently still limited, because agribusinesses are uncertain about the wider application of ICT tools and because farmers' access to smartphones and similar devices is low, among other reasons. However, this will become less of a constraint over time, as access to new technology continues to increase worldwide.

Hence, agribusinesses can increase the effectiveness of their advisory services by:

- systematically generating feedback from farmers on the services provided;
- ensuring that farmers' feedback available among staff is captured and processed;
- including advisory service-related questions in existing monitoring and evaluation tools/surveys;
- seeking expert advice on the choice of ICT for collecting and processing farmers' feedback and other relevant information;
- formulating farmers' feedback as concrete recommendations for improvement to guide critical reflection and organizational learning.

Farmer feedback and the relevance of agribusiness-based advisory services

Without well-functioning direct feedback mechanisms, information and training provided by field officers may not, or not entirely, correspond to the situation farmers are in and the problems they face. Low or insufficient relevance of services for farmers can ultimately lead to a decrease in farmer demand and declining farmer participation, even in situations where few other service providers are available. Conversely, increasing the relevance for farmers can have spillover effects and augment demand among non-users for agribusiness-based advisory services (Jones and Kondylis, 2016). Given the importance of service delivery to achieve business objectives, increasing the relevance of services for farmers can translate into direct benefits for agribusinesses.

To increase service relevance for farmers, agribusinesses should put the issue of non-adoption – or low levels of adoption – centre stage, including causes and effects of non-adoption, and include this as a main objective of feedback systems. Insights from such an analysis should be shared widely within agribusinesses, to connect potential areas of improvement across business units, such as changes in service delivery, marketing strategy, and product(s) sold. This should also include a review

of different categories of farmers reached (farmer segmentation), the differences between them in terms of conditions and issues of (non-)adoption, and the implications for tailoring content and approach of advisory services.

Summing up, agribusinesses can improve the relevance of their advisory services by:

- paying more attention to the analysis of non-adoption or low levels of adoption among farmers;
- internalizing this understanding within the organization;
- tailoring the content of advisory services to different categories of farmers, based on a good understanding of their respective needs, characteristics, and conditions.

Farmer feedback to give insight into the development impact of agribusiness

The lack of feedback mechanisms not only reduces the effectiveness and relevance of advisory services, it also leads to a lack of knowledge on the impact of services on farmer livelihoods. Many of the interviewed agribusinesses assumed positive livelihood effects of their services. However, most lacked the data to validate their claims. This is because, with few exceptions, most agribusinesses do not pay systematic attention to the effects of their operations on farmers beyond technical data on product sales to farmers and quantity and quality of produce sourced from farmers.

However, as private sector actors, including agribusinesses, are increasingly engaged in service provision to (often small-scale) farmers, questions about how these services contribute to development outcomes are bound to increase (Zhou and Babu, 2015; Donovan et al., 2017). Agribusinesses also stand to benefit from being able to show the development outcomes of their services, for example to gain reputational benefits, increase demand for services among non-users, and to attract third-party funding for special projects. Reducing the knowledge gap on development outcomes could be done by:

- integrating indicators to capture development outcomes into existing monitoring activities and ensuring that monitoring is conducted in a systematic manner;
- using beneficiary feedback to inform indicators by collecting data during group meetings with farmers and aggregating and comparing these data over time;
- investigating the potential benefits of innovative methods to report on outcome monitoring which are currently being developed, such as the Living Income Methodology, alongside modern ICT options such as the Blockchain platform, to collect, handle, and share relevant information widely.

Conclusions

Agribusinesses provide focused advisory services to diverse farmers in developing countries, which are often farmers' main source of technical advice. While generally attaching considerable importance to farmer-specific information to improve business strategies and target services and products, this study suggests that agribusinesses pay relatively little attention to mobilizing systematic feedback from farmers

on their advisory services. To understand the effectiveness and performance of such services, most agribusinesses rely on data collected for general business purposes, such as on volume and quality of produce sold to sourcing companies, or type, quality, and volume of products bought from input suppliers. There are, however, important limitations in using such data to assess their advisory services.

This paper has shown that there is considerable potential to improve feedback systems, especially by using direct feedback mechanisms on why farmers adopt or do not adopt advice and relevant technology, which knowledge gaps farmers still exhibit, which products work well and why, and which services farmers need. In other words, agribusinesses can make their services more targeted, with the potential to increase effectiveness and relevance of service provision.

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