

Knowledge management unlocks market systems for poor women farmers in Bangladesh

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CARE Bangladesh has long worked with the private sector to find market-based solutions to help the extreme poor, especially women and girls, graduate out of poverty. Social inclusion into market systems is critical to this graduation. Similarly, the integration of information technology has potential for impact at scale. In two of the most successful experiences, the Agricultural Extension Support Project and Strengthening the Dairy Value Chain, unlocking partnership with the private sector, understanding needs and expectations among CARE, private sectors and communities helped to co-create innovative information usage and manage knowledge transparently. Strengthening the Dairy Value Chain, with support from the Bill & Melinda Gates Foundation, used new Digital Fat Testing machines to make milk quality very transparent to producers and buyers, and pay a premium for higher quality milk. To do so, the project combined field collected data on milk quality, farmers' profile, including geographical locations over google map, which enabled private sectors to have detailed supply chain information including quality milk, volume and female farmers' as active producers., This also helped private sectors understand which female farmers needed capacity building support to strengthen their ability in business planning and productivity. This gender focused experience was transformative in the sense that this enabled Aarong dairy (the second largest dairy company in Bangladesh) to work in a targeted manner in scaling smallholder women's participation in their supply chain from 2% to 55% in just 4 years. Brokering knowledge between different private sector actors, from smallholder farmers to large scale companies, was a turnkey solution that unlocked broader inclusion of poor women farmers in fresh dairy sector. In a highly gendered society like Bangladesh, women's mobility, voice, control over asset, financial decision making are limited. When these multiple forms of discrimination are coupled up with poverty, the intensity of marginalization is much deeper and have inter-generational impact requiring dynamic multi-stakeholder approach to be addressed. The Agriculture Extension Support Project, with support from USAID's Feed the Future, worked with banks and communities to get new agricultural financing to women who normally would not be able to access them due to various constraints. Combining digital technology, local agro-dealers, and new knowledge about a potential customer base, the project was able to facilitate the

information and knowledge process in a way that allowed banks to engage a new customer base and co-create an innovative practice that helped transforming the financial inclusion of small holder women farmers. The pilot phase allowed 3,100 people, more than half women, to access USD190,000 in loans to improve their agricultural productions, at less than half of the interest rate they would have been charged with other sources.

Keywords: knowledge management; market-based solutions; value chains; agricultural extension; private sector; financial inclusion; gender; social inclusion; knowledge brokering; dairy; Bangladesh

Introduction

This paper looks at the role of Knowledge Management (KM) in agriculture, market systems, information technology and gender equality. KM has its beginnings in late 1980s to early 1990s in US (Milton, 2018), when corporations were trying to retain and transfer their knowledge as their workforces transitioned with new technologies like Chapparral Steel and PwC. KM addressed these issues by providing a system that enhances organizational performance and impact by enabling adaptive management with timely and appropriate decision-making. Similarly, KM practices spread to International Development, where its importance grew as a tool for improving aid effectiveness (Bosch, 2019). In 2005, the Paris Declaration on Aid Effectiveness highlighted managing for results as a fundamental core, similar to private sector goals. More recently, in 2015 all member states of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development and committed to achieving 17 Sustainable Development Goals (SDGs), in a global partnership (UN, 2015). Effectiveness for development in the framework of SDGs is a contemporary challenge requiring KM. CARE draws extensively from existing theory in the Knowledge Management space to shape KM work. CARE's formal definition of knowledge management is adapted from NASA (undated), and states that 'Knowledge management is the process of CARE, partners, and participants, accessing and applying relevant knowledge to solve problems and measurably improve impact' (CARE, 2018).

Bangladesh is one of the 5 countries which make up half the world's extreme poor population (Defined as living on less than USD1.9/day) (Katayama and Wadhwa 2019). With high population density, low human resource development labor intensive sector like agriculture plays a key role in Bangladesh's development consistent rapid economic growth, contributing 14.1% of GDP, while providing 40.6% of its employment. Achieving self-sufficiency in major food staples stabilized inflationary pressures created by country's rapid economic growth, where 68.1% of women of in labor force are directly engaged, being the driver of change (Ahmed

2020). Despite high participation, women in agriculture face gendered barriers in controlling resources, accessing markets that prevent them from acquiring the full benefits of economic growth. So is the case in Bangladesh where women, especially the women farmers are yet to realize their full potential due to gendered and exploitative power structures. However, as this paper will illustrate, there are market-led collaborative practices that address these gendered barriers and empowering women to play the role of an important economic actor in the society.

This paper explains how CARE Bangladesh engaged with private sector to create gender-sensitive inclusive business solutions that benefit both market actors and women from marginalized communities in agriculture. It begins with CARE Bangladesh’s approach to understand the broader eco-system, extract knowledge and manage it with private sector partners and communities to explore ‘mutually beneficial solutions’. Applying knowledge management from the lens of solving problems and improving impact allowed CARE to work collaboratively with women producers and the private sector to come to solutions that would not have been possible from one perspective alone. The approach is exemplified in two case studies with focus on fresh dairy market systems and financial inclusion of women smallholder farmers respectively. The strategic architecture of knowledge management to bring these actors together for a shared vision of mutual benefit helped garnering market-based solutions, managing private sector partnerships, helping communities to overcome gender and economic barriers by following adaptive management practices.



Figure 1: KM Cycle (Source: Deloitte)

Co-creating and managing knowledge with private sector

CARE Bangladesh’s Private Sector Engagement approach adapted this model of KM (see Figure 1)¹ for its engagement with private sector. NGOs and private sector have mutual interest in engaging the poor and marginalized population while they have mutually solvable problems. Private sector companies don’t know enough about this potential market to engage them successfully. At the same time, NGOs who have extensive knowledge of women’s needs and

constraints and aim to engage them in better livelihoods, but struggle to convince private sector actors that investing in poor women makes business sense. This is addressed in CARE's approach to private sector engagement as a knowledge broker. With decades of working experience, CARE has collected in-depth profile of poor and marginalized groups which CARE, women, and the private sector can use collaboratively. This collaboration results in customized good and services tailored to needs of economically and socially disadvantaged groups. These products/services are piloted in partnership, assessed on their performance, and go through iterative improvements to settle on product/services pricing, characteristics that private sector can then scale on their own. Thus, the private sector and CARE combine their skills to design and pilot goods and/or services together for targeted impact group with direct feedback from and information sharing with the impact group – poor women farmers in this case.

Principles of KM allow flexible design and rapid adaptation that is required when the development sector perspective meets the profit-driven goals of private sector actor. The steps in the cycle are exemplified by case studies in subsequent sections. The case studies below show how KM principles provided viable market-driven solutions that induced meaningful inclusion of women in market systems and access to finance.

Case 1: SDVC – KM changing industry practices for inclusion of poor women dairy farmers

The Strengthening Dairy Value Chain (SDVC) project assisted the second largest fresh dairy product company in Bangladesh to shift to an alternate sourcing method, called the Dairy Hub Model (see Figure 2) working with 30,000 women who were landless small dairy producers with monthly income being between USD20-30, and livestock of 2 to 2.9 cows. The Dairy Hub Model is a supply chain which targets smallholder dairy producers (mostly women) as source of fresh dairy in a commercially viable manner. It aimed to transform role of women as productive economic actors by establishing direct business relationship with large companies. Doing so required transforming the market space, changing mindsets and attitudes of market actors towards recognition of women who were small dairy producers as viable suppliers. Simultaneously, enabling these women with market knowledge, business skills and mindset with increased market access, confidence and leadership skills required to work with large companies, building economic agency and decision making ability in their homes and business. As the barriers to women's inclusion are also social, it involved engaging men and boys at community is equally important to create enabling environment for these women so that the broader ecosystem is women friendly. Meanwhile, the information system and knowledge management

efforts were centered around gender aspects so that issues faced by women are understood and proper planning, processes are established for adaptive management.

The broader systemic challenges of women's inclusion in economic participation is evident across indicators of economic participation. Bangladesh ranks 141st out of 153 countries in Economic Participation and Opportunity for women according to Global Gender Gap Index, 2020. As of 2018, 38% of adult women were part of the labour force (up from 34% in 2017), compared with 84% of men and estimated average annual income of women is 40% that of the men. Discriminatory gender norms limit women's mobility, economic opportunities and most importantly ability to access, own and control their own assets and resources. Thus, even though most rural households have cows, the care of which falls on the woman, cows are seen as a safety net asset and not a business investment (Sebstad and Cohen 2000). The World Bank study in Bangladesh highlighted that women have had a limited role in the household decision-making, limited access and control over household resources (physical and financial assets), low level of individual assets, heavy domestic workloads, restricted mobility and inadequate knowledge and skills leading to higher vulnerability. It is these challenges in light of which the SDVC project was designed.

KM approach, use and success

KM was one of the 4 key objectives of SDVC defined as 'Share learnings on Dairy Hub Model and advocate for adoption by other participants in the Bangladesh dairy industry.' To do so, the project worked to increase capacity of dairy farmers, improve transparency and fair pricing for farmers and increased access to quality inputs and services. SDVC also enabled adoption of dairy hub model within Aarong and beyond with timely information and promoted a more gender inclusive value chain which increased women's control over resources and decision-making. From inception, the aim of SDVC was to scale the Dairy Hub Model beyond project, enabling Aarong dairy to expand with more chilling plants in new areas with other companies copying the model as they see profitability in it, changing the industry practice.

To do so, the project had a robust monitoring and evaluation team who worked directly at the chilling plants to gather evidence of success while also encouraging potential high-performing dairy producers to move up to being forward market actors as positive role model for other women dairy producers. As such, women dairy producers went onto become collectors and group leaders collectively bargaining price and supply volume requirements directly with company representatives – a role left exclusively to male actors at start of the project. In addition, resources were allocated not only for standard monitoring and evaluation (M&E) practices but also for a set of knowledge documents that would replication of Dairy Hub Model by other companies or scaling within Aarong Dairy.

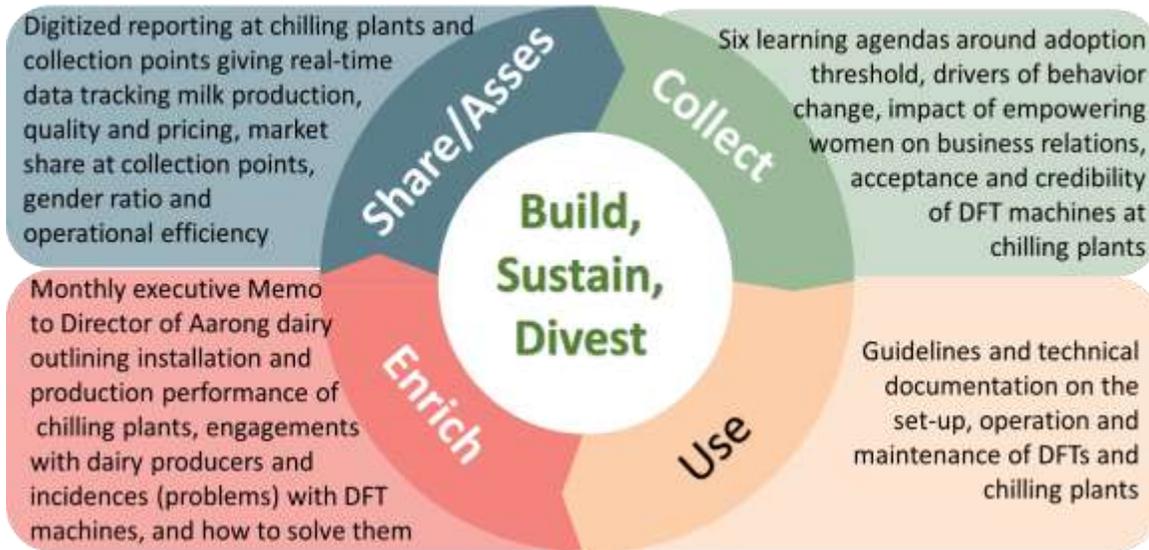


Figure 2: Dairy Hub Model

Collect - At the conception stage, SDVC II extracted knowledge and learning from Phase-1. This provided CARE with vital knowledge about the women dairy farmers, their demographic, psychographic and livelihood related understanding. This enabled CARE Bangladesh a detailed evidence-based understanding of what impact group needs and the key market failures that were preventing women dairy producers and large scale private sector companies from connecting effectively with each other. Importantly, many of the key barriers were related to knowledge management both for women and for Aarong Dairy. These included lack of transparency and information about milk quality, prices, areas where services were available, and where there were women dairy producers who could connect to Aarong.

Use: Using the understanding of Fresh Dairy sector and female dairy farmers, CARE approached this complex market system with contradictory positions and competing interests among the Private Sector Company, women milk producer and CARE., This enabled SDVC to work as a facilitator by sharing supply chain insights, behaviors, and evidence based adaptive management with the private sector; developing scalable models to work with small holders more effectively and incentivizing factors for changing behavior, mobilizing resources from other actors, while strengthening role of women farmers. It also focused on tools to make relevant information more transparent to women around prices, the quality of milk, and ways to improve their milk production.

Enrich: The main challenge of sourcing fresh dairy from remote dairy producers is its very short shelf life. Raw milk spoils in about 3 hours from collection. To increase this time, it has to be chilled, which doubles it to 6 hours when it can be transported to the main factory to be pasteurized and packaged for retail sell. Thus, chilling plants are a pre-requisite for collecting milk from distant sources. Aarong Dairy planned new chilling plants closer to smaller (poor) dairy producers to bring them under its supply chain. However, with chilling plants being very expensive, only a limited number could be set up and as most poor households across the nation have some cows for dairy production, the key question became where to set them up for maximum supply. SDVC carried out GIS mapping of dairy farmers across project areas to identify high producing clusters. Then through data triangulation the locations of chilling plants were chosen so they were equidistant (as much as possible) from a number of milk producing clusters required to fulfill production capacity. With detailed information on farmer's level of understanding, production technique, daily production amount and other factors, Aarong could take a more informed decision regarding its supply chain expansion. Consequently, poor women dairy farmers got access to a chilling plant within reasonable distance where they could regularly sell milk instead of depending on volatile, random local demands from collectors etc. This process also established the recognition of female dairy producers are economically productive and visible stakeholders of the respective dairy supply chain.

Share and assess: For a successful operation of Dairy Hub Model, the private sector and small dairy producers needed mutual understanding and shared goals. CARE served as liaison, matching business goals of Aarong with those of women dairy producers, identifying gaps and needs for mutual benefit, understanding gender and social norms and identifying efforts to help women farmers to play bigger role while addressing geographical and technological challenges of operating chilling plants etc. all towards achieving wider systemic changes. This resulted in greater focus on farm management (especially business planning) and trade skills required to maintain a consistent professional business relationship between women dairy producers and Aarong Dairy through respective chilling plants. The evidence of change from project evaluation (Datassist and CARE 2016) are as follows:

- Milk Production per cow (cross-breed) rose by 2.74 times
- Income rose by 15%
- Market Linkage was measured by Milk selling pattern – Selling directly to company rose to ~50% while selling to milk collectors halved to 7.8%. In addition, selling to other actors (neighbors, Open market and sweet shops) all increased, demonstrating a wider customer base for dairy farmers indicating stronger business.
- Women dairy farmers control their income: Women acquiring cattle with their own income rose from 26% to 43%.

These dairy farmers were often the first women in their family or community to be involved in any business, thus required additional training on basic business skills which larger, usually male owned dairy producers did not need. Thus, as operations commenced periodic knowledge exchange sessions between dairy farmers and company management tweaked the business terms and conditions, greatly improving operational efficiency of the Dairy Hub Model.

Build-sustain-divest: SDVC was designed with resources allocated for data collection, reporting and other KM activities with the focused aim of helping Aarong Dairy answer the key question of what aspects of Dairy Hub Model should they invest in, sustain afterwards or divest from. The success of the model not only depended on social benefit of including small women dairy producers in supply chain; but also in being a commercially profitable venture, a good business strategy that others would adapt regardless of whether they are concerned with generating social benefit or not. This balance of social and business benefit was successfully maintained as seen by the following:

- The clear success of the Dairy Hub Model and using DFT is that PRAN (largest fresh dairy company now) also adopted similar model with DFT within the year of project's end. There are 100+ local importers who have DFT machines in their portfolio indicating the industry has adopted it as one way of maintaining supply chain and procurement of fresh milk (Tradeford, undated).
- The private sector partner, Aarong dairy, grew rapidly to account for 30% of nationally packaged dairy products market sourcing through 108 chilling centers from 28,000 dairy farmers and employing 14,000+ employees. Within project duration the participation of small women dairy producers grew from 2% to 55% and are now the majority producer in their supply chain.

Lessons learned and recommendations

Choosing the right private sector partner is a crucial aspect of successful KM collaboration. The company's ability to adopt and scale successful solution must be matched by its willingness to adopt gender inclusive approach. Aarong dairy is a for-profit subsidiary of BRAC, which is the world's largest NGO with the core mandate of unlocking economic and social potential of empowered women. The gender inclusive approach is ingrained into the organization's principle and thinking. This allowed the partnership and knowledge exchanges to occur with minimal problems. It was also critical to maintain business intent of both Aarong and communities which is where the information systems, knowledge flow, adaptive management and community engagement played a role to help evolving the business viability of the intervention. When

tweaking the model, it is essential to check whether the model remains profitable being gender inclusive. Working with poor and marginalized women farmers must make business sense or the model would not last beyond project.

Knowledge is ineffective without action. KM in private sector engagement has evolved from traditional project monitoring & evaluation. It goes beyond reporting on what is happening to investigate why and how for adaptive measures during project, rather than waiting till the end for final evaluation. Consequently, investments in KM was made throughout lifecycle of the project, synced with relevant stages in KM cycle with the goal of assisting Aarong Dairy to decide which aspects of Dairy Hub Model to build upon, which to sustain and what to divest from. These targeted investments created the space for informed and involved partnership with private sector actor, greatly increasing post-project sustainability of SDVC.

Case 2: AESA – Knowledge Brokering for financial inclusion

The USAID Agricultural Extension Support Activity (AESA) was a 5-year project working to enhance the agricultural extension services to 110,000 farmers in Southwest Bangladesh by working with 1,000 government extension agents, local NGOs and financial service providers. The farmers were identified via lowest in Well-being Category (White 2008) owning 0.2-1 hectare land. As part of AESA project, CARE formed multi-party partnership with local NGOs and Bank Asia to launch ‘A-card’ – cash-less financial product with lower interest rate and long repayment period, designed exclusively for small holder women farmers.

KM objectives and success

KM was an essential component across all objectives, particularly in enhancing access to and utilization of agricultural extension services by smallholder women farmers, expanding and integrating ICT to increase access to agricultural market information, knowledge and technologies and in strengthening capacity of extension service agents to respond needs of smallholder farmers especially women farmers. Marginalized populations in poverty cannot get access to formal banking as they do not have sufficient assets to provide as collateral, among other disadvantages. Despite being the world leader in microfinance, Bangladesh still sees huge gender inequalities in access to finance. Even when women can get loans, only 13% of women are able to exercise control over the use of loans (Singh, 2018). Thus, a better system of financial access is required. Particularly for A-card, CARE, with Dhaka Ahsania Mission (DAM), served as knowledge broker and facilitator between smallholder farmers, local Microfinance Institutions (MFIs)/NGOs, agri-input sellers and formal banking institution (Bank Asia). This entailed the following knowledge brokering activities:

Collect: The banking industry of Bangladesh is rapidly growing for decades and highly competitive. Companies like Bank Asia, in order to expand their market opened Agent Banking services (small banking branches in remote corners of the country). They are able to provide lower interest rates compared to microfinance loans (who charge 25%-30% on average) with more flexible payment terms. However, their understanding of smallholder women farmers is limited due to lack of exposure and gaining that understanding would be too expensive compared to the gains. At the same time, traditional gender and social norms, mobility restrictions, inability to own family land, limited financial decision making authorities at household levels combined with lack of reorganization biased women's significant contribution to the agro-economy in the country. They are unable to design accessible financial products for them as risk factors of bad loans cannot be correctly gauged and also gendered differences in loan requirement, use and engagement. That is the valuable knowledge and insight that CARE brought in based on its decades of work with communities. CARE helped to identify most viable women candidates from among their 110,000 farmers' database. Project provided individual farmer's profile: agriculture production cycles, financial acumen, extensive records of income and profitability as well as gendered consumer behavior understanding of women farmers as potential customers – enabling Bank Asia to select best candidates most likely for loan repayment.

Use: For any loan product, the crucial factors are interest rate and repayment schedule. By reducing risk of bad loans, Bank Asia could feasibly provide lowest possible interest rate (10%) which was half to a third of the microfinance loan rate available in the market. The repayment schedules were customized according to farmers' agriculture production cycle, with substantial grace period of six months – made possible by detail farmer profile provided by CARE.

There was additional challenge for women farmers, as due to social restrictions on mobility and interactions between men and women, women farmers do not interact directly with retailers (almost all-male), usually working through their spouse. They also have no interaction with technologies like A-Card. Thus, along with loan terms, in-depth profiling of women farmers guided the loan disbursement method and retailer interactions, which became a part of retailer on-boarding.

Enrich: One of the crucial terms of A-Card was to have the loans be disbursed through NFC-Enabled digital cards, akin to credit card, which could only be used to purchase agriculture inputs (Seed, fertilizer, pesticide etc). This was much more complex and capital intensive than a simple cash loan. However, CARE Bangladesh was adamant on this factor because the cashless loan increased women's control over money. Because women have little control of money and assets, cash loans are often taken away by male members of the household (parent/spouse) for

their own purposes. To convince banks to adopt this more costly model, CARE was able to demonstrate that cash loans might be easier to disburse, but are less likely to be repaid on time in full as the person profiled (women farmers) would not be the person using the loan (her spouse/male member of HH). In addition, despite high penetration of mobile telecommunication and growth of ICT, women have limited access to it, due to patriarchal barriers. With a gender gap of 34% in mobile phone ownership and 62% in Internet usage, gender remains a significant barrier to connectivity in Bangladesh (Hernandez 2019). Thus the technology adoption had to be on the retailers' side and not on smallholder women farmers. These are some of the specific gendered insights which informed the product design to be customized to characteristics and needs of impact group – increasing A-Card's adoption and probability of success.

Share and assess: Going cashless meant developing a network of agri-input sellers where A-Card could be used. Just like the small farmers, Bank Asia had no experience of working with small shops selling agriculture inputs like seed, fertilizer etc. Here, CARE used its knowledge on local agri-economy to identify shops best suited to serve the chosen women farmers. These retailers were on-boarded onto this new technology, a knowledge transfer task that NGOs like CARE can deliver due to their intersectional understanding of banking systems and smallholder agri-business. The solution was mutually beneficial. Retailers, who provide goods on credit (With higher interest and strict payback terms) receive payment instantly from Bank Asia and the bank has a new customer base able to access other products as necessary over time. These retailers also had to be sensitized to the customers being women farmers and how to responsive to gendered needs – thus ensuring initial interactions of women farmers with A-card retailers goes well.

Piloting innovative models is always a challenging task as parties involved often have to step beyond their usual expertise, naturally resulting in mistakes and challenges associated with experimentation. From the aforementioned SDVC project, CARE learned the importance of assigning roles to organizations according to their expertise to maximize chance of success. From in-depth knowledge of rural smallholder agro-economy, it was decided that while Bank Asia will disburse the loan, its collection has to be done through local MFIs and NGOs which have decades of experience in running loan schemes. This was a form of knowledge brokering where CARE carried out business matchmaking services according to needs of the model. This not only meant better loan management and repayments, but also greater risk sharing as Bank Asia shouldered only 10% of the risk of loan default (MFIs/NGOs takes the rest) while taking only 10% of the profit. Since Bank Asia's goal is to initially penetrate the market and learn how to manage this new group of clients, they were ready to forego profits. This allowed the large scale of the pilot. CARE's role did not end with starting the pilot, but throughout all three parties collectively tracked the loan taking women farmers to ensure they have a smooth transaction

process and are able to use the agri-inputs as intended to increase chance of successful harvest and consequently successful loan repayment.

Driving this performance tracking was robust KM system of monitoring, evaluation, advocacy and learning (MEAL) with joint studies and ICT-enabled dashboards accessible by private sector, banks and CARE. This included A-card website and dynamic progress assessments facilitating management of A-card program. While the loan terms remained constant, the management of A-card program and terms of interaction between the 4 parties: CARE, MFIs, Bank Asia, Retailers and Women farmers, were constantly tweaked in periodic meetings to improve the relationship underpinning the successful pilot of A-Card.

The success of this iterative process was seen during its evaluation (Mahalder et al 2018):

- During the pilot stage A-card receivers showed 100% repayment rate, production increased by 5.5%, with production cost increasing by 4% (purchasing quality inputs) and revenue increasing by 15%. Thus, A-card farmers' income has increased by 14% meaning USD250 in additional profit in 6 months.
- Total savings with MFIs are at Tk. 100,000 (USD1300) with many saving for the first time. Without control over income or resources, savings were not viable for women farmers before. However, particularly for informal savings group, poor women have a general propensity to save that is stronger than men's propensity (Hernandez 2019). Thus, although not part of A-Card program initially, these women farmers started group savings with Bank Asia, creating another avenue for interaction to build future banking relationships. These changes were readily accepted by all parties due to their conviction in profiling of poor women farmers and their business network along with evidence-based understanding of gendered needs of customers.

Build-invest-divest: The project invested in developing detailed operational guidelines with stakeholders on each aspect of the model, like on-boarding retailers, gathering customer feedback, booklets on various agriculture businesses like beef fattening, dairy, aquaculture, training banking agents to disburse and collect repayment of loans etc. This was done so that post-project Bank Asia, DAM, MFIs and local NGOs can carry on the roles carried out by CARE post-project.

A major aspect of this knowledge transfer was for Bank Asia the understanding of smallholder women farmers and their gendered needs along with financial needs. The customer feedback was not only on loan terms but also their interaction with other actors, especially banking agents on disbursing and repayment of loans, who are used to all-male clientele. It was important for

CARE that all parties have similar level of customer profiling of women farmers or the pilot might derail to become another financial product for mostly male farmers. Thus customer feedback from women farmers shaped interactions of local banking agents and input retailers to be more gender responsive.

Bank Asia has committed to local procurement of A-card production along with machine readers for further expansion. Their current goals are to reach 50,000 users by 2021. Similarly, DAM continued its partnership with Bank Asia in expanding its network of Agent Banking. RSDA one of the local MFIs worked in to promote A-card completely on their own with Bank Asia to include further 2000 farmers. For Bank Asia, they aim to have half their users be women, while DAM and RSDA, who already have a large base of women farmers using MFIs, aim to shift towards A-card due to its better repayment rate and ensuring ownership and control by women. Their continued investment behind A-card is validation of the accuracy in profiling of women farmers and their business network, underpinning the design and implementation of the pilot.

Syngenta, among the largest agro-input companies in Bangladesh and the world, signed an agreement which would open their extensive network of licensed retailers to be included. They aim to provide smartphones to selected retailers to reach 1000 new A-card holding poor farmers. Syngenta has committed to larger portfolio in livestock feed and mixed seed packs for homestead gardening, both of which are traditionally female-centric activities. Thus, their investment behind A-Card is another validation of the quality of customer profiling and gendered insights into working with female smallholder farmers, who remain the biggest untapped market for agro-based companies.

Lessons learned and recommendations

Information dictates innovation's success: The quality of information on profiling of poor women farmers and their business network (retailers, MFIs, buyers etc) dictates the quality of decision making regarding product design and operations. It was specific accurate profiling, which lead to accurate selection of loan candidates which led to the high repayment rates.

Bridging the digital and gendered divide: The key challenge to executing A-card model was the digitization of loans to be cashless. Smartphone usage among retailers is very low and extensive capacity building and knowledge transfer needed to occur for the system to get up and running. Similarly, while fully understanding the benefits of cashless business transaction, women farmers also needed to shift mindsets to accept loans responsibility without having the cash in physical form. In addition, women farmers need to face the additional burden of societal judgement as they would need to travel to market and directly interact with retailers (mostly

male). Focusing only on the digital divide aspects would eventually lead to mostly male farmer clientele and/or women farmers sending their spouse – which eventually defeats the whole purpose of going cashless. Thus, through knowledge brokering it is important to keep gendered aspects in focus alongside business priorities. In this sense, CARE's role as knowledge broker was to essentially remind the business benefits of working with women which mostly-male clientele of Bank Asia can regress away from due to comfort with status quo.

Understanding limitations for adaptive management: One key aspect of KM in A-Card was identifying what it *cannot* do. Thus, initially, it focused on established livelihoods like rice and bull fattening. Although immediate needs arose for farmers in other areas like Aquaculture, the project exercised caution in developing a stable operating model first. KM is crucial in these actions of strategic prioritization and planning. Also, although the aim of A-Card was to shift up the women farmers from microfinance loans, knowledge and learning exchanges with A-card receivers revealed some cash loan is still required for paying day-labors wages in farming – meaning overlapping loans would still exist. Consequently, the banking agents and MFIs were trained to look at comprehensive loan repayment load for the farmer, not just for A-Card.

KM practices of CARE in market-based solutions

The aforementioned experiences informed CARE's approach to engaging private sector in understanding socio-economic barriers of gendered norms that systematically limit women's ability to do business, while quantifying their potential as economic actors and valued assets to private sector. When the knowledge exchange begins with a gender lens, so does the eventual solutions that arise eventually with collaboration. Given below are the KM principles of engaging private sector for business solutions inclusive of women.

Co-creating solutions

KM activities and exchanges are at the heart of co-creating solutions and managing the knowledge as part of adaptive management processes. Iterative approach, adapting to market realities and needs of poor women farmers and creating a sense of mutual. Market-based solutions are highly prioritized in development sector and transitioning towards sustainable solutions and impact at scale. However, mindsets differ, so to be effective, it is necessary to have mutual exchange of knowledge for action.

A market accepting of women requires private sector companies and CARE to bring together their respective knowledge and experiences to produce solutions that are profitable and inclusive. This requires both quantitative business data and qualitative information on attitudes, behaviors,

mindsets, social norms etc to be combined so that communities and private sector can achieve mutual understanding and mutual perspective shifts, required for a sustainable business relationship.

Not CSR but business partnership

Private sector engagement in development work is often defined as Corporate Social Responsibility (CSR), indicating private companies work with NGOs out of a sense of social responsibility and general welfare. CARE's principles of engagement posit that NGOs are business partners with private sector counterparts it is a partnership for mutual benefit. Pro-poor inclusive business is a profitable venture, working with poor women is not for charity, it's good for business. NGOs expertise, reach and understanding of the poor and marginalized communities is an asset for Private companies to reduce risk and CAC (Customer Acquisition Cost) required to penetrate market with relevant products and services. While these companies can provide the scale and resource to create beneficial impact at scale that sustains beyond project duration.

Impact at scale and sustainability

Co-designing and co-implementing pilot of innovative products or services is the most promising form of engagement for all parties involved. Aarong Dairy greatly expanded its Dairy Hub Model and was adopted by others like PRAN and Rangpur Dairy not out of sense of social responsibility but because it proved to strengthen the business. Similar exchanges are seen in A-Card with the service expanding to other projects of CARE as well as continued partnership between DAM and Bank Asia. This required investment in collecting, sharing, and applying data that created solutions for poor women farmers. This investment is something that private sector companies do not make on their own, as it requires operations, skills, and presence in these communities that they do not have in-house. Those are the exact resources CARE has access with their experience, enabling the iNGO to provide information in an applicable manner for private sector actors.

Whether profit motives or social responsibility, patriarchal notions on economy means most market actors would be males used to working only with males. Consequently, economic interventions disproportionately favor males as they hold the control over economic activities. CARE's approach to knowledge brokering focuses on gendered interactions in among market actors with women farmers and larger community, creating space for women to both engage in economic activities and benefit from them equitably.

The oversimplified understanding that private sector is only profit-driven while NGOs are purely charity-based no longer holds true. Banks are actively pursuing remote smallholder women

farmers to be their client while most local NGOs have microfinancing institutions (MFIs) wing. Aarong dairy – the second largest dairy company is a spin-off from development projects of BRAC – the world’s largest NGO. In this rich dynamic environment, iNGOs like CARE represent interests of economically and socially marginalized people like smallholder women in agriculture – to ensure that the engagement mutually beneficial, and those benefits reach equitably across genders. As knowledge brokers, the role of CARE remains to establish the poor and women as viable business actors, either as supplier or client. Like any partnership, mutual benefits may start it, but only mutual understanding of mindsets will sustain it. Thus, CARE focuses on gendered differences having equal focus with business related differences.

Importance of tacit knowledge

The private sector is also adapting to the development mindset of inclusive business. Private Sector Actors are gaining capacity in the role of trainers to beneficiaries & retailers/agents, a role usually left to NGOs. They may become a viable alternative, expanding our choices and scope in partnerships. However, despite various detailed written guidelines, private sector representatives struggle to work with marginalized women farmers. Effective knowledge management results in behavior change, and for that to happen it requires understanding of approaching and engaging women farmers. This tacit knowledge, of not just communicating information, but *how* it is imparted is still a skillsets of NGOs. Transferring that skill through co-implementation is equally important. Thus, Bank Asia’s banking agents work directly with MFIs and local NGOs while during SDVC project, the project staff essential ran the DFT machines, chilling plant and collection points, accompanied by Aarong company representatives, to acquire that tacit knowledge of working with women dairy producers.

Partnerships for inclusive market systems:

The process of our partnership may be summarized as:

Profiling: Instead of expensive Market Research, NGOs like CARE provide in-depth quantitative and qualitative understanding of poor and marginalized, gleaned from decades of experience and baseline data, on who they are (*demographic*), how they think (*psychographic*), and what it would take for them to purchase inclusive products or services (*consumer behaviour/purchasing behaviour*). Even more valuable, CARE provides a ready database to choose from among thousands (or millions) of poor and marginalized women with whom they interact regularly through their projects.

Co-design: The projects provide testing ground for these products to be refined (like for A-card it was Interest rate, loan amount range limits, repayment schedule etc) CARE answers these questions from perspective of poor and marginalized while Bank Asia measures business

feasibility of needs - somewhere in between lies the product or service features which will be successful. The honest exchange of explicit and tacit knowledge is essential for sustainable solutions

Co-manage: NGOs have human resources honed to work with economically disadvantaged and marginalized with special focus on women. Private sector companies have relatively wider distribution networks for its products/services. However, due to lack of exposure, private companies do not have sufficient expert personnel to reach out to poor and marginalized population, especially women. As general economic participation of women is low, the private sector company's frontline employees are unlikely to have extensive interaction with women and business clients, whether buyer or supplier. Thus, they would require their teams to be trained and new. management teams set up team to rollout pilot . Instead, partnering with NGOs allows them to capitalize on each other's knowledge assets. Like to introduce A-Card to communities of women farmers, Bank Asia were able to use CARE's frontline project staff, community leaders or volunteers essentially as banking agents. This meant Bank Asia had a tailored team with in-depth localized gendered experience with poor and marginalized women farmers. Sharing resources and expertise lowers cost of implementation on all parties involved.

Scaling: Finally, through products like Intervention Guideline, if Bank Asia or DAM wants to scale up A-card in other areas on their own, they know exactly the costs, who to reach, how to reach and whom to use as agents. This facilitates their scaling while multiplying impact (for us) creating lasting change beyond projects. As the importance of tacit knowledge shows in A-Card, the intervention guideline alone is not enough, the people to people on-the-job skill transfer is equally important which often leads to failed scaling attempts post-project. Gendered differences in customer profiling for any product or service defines market interactions to build business relations. Private companies need not only data but the people skills to interact with this new customer/supplier.

KM in market systems approach: evolution and limitations

KM is still evolving in the development sector of Bangladesh, as is the approach of inclusive markets for women. Thus, KM practices keep changing from project to project. The agri-business environment is rapidly evolving, dynamic – and its role of KM to remain relevant and useful. KM is effective when it results in actions that improve efficiency, effectiveness, impact or sustainability of the project. There are limitations on applying KM in development work. Markets are driven by profits, tangible attributable benefits. KM lacks that, making it difficult to measure. Meaningful knowledge and learning needs systematic engagement capturing both tacit and explicit knowledge which requires investment. The proof is often seen only at the end, incongruent with quick-wins and iterative visible results-driven decisions associated with private

sector thinking. As such, more evidence is required for KM to become a standard practice in inclusive market approach for women.

Conclusions

Business solutions to reduce poverty is an important aspect of development. However, due to low economic participation of women, these benefits of decreased poverty are not gender equitable – women do not benefit from these solutions in the same way as men do. Private sector has limited understanding of working with women as market actors and supply chain where NGOs excel. A successful pilot of including women farmers into business requires sharing quantitative evidence of mutual benefit as well as tacit skills of working with women farmers by market actors who have dealt with almost exclusively male clients. The process is iterative and multi-stakeholder requiring NGOs like CARE to play role as knowledge broker. The above cases offer examples of how private sector, NGO and communities can work together for mutual equitable benefits. The gap in knowledge, understanding and interaction between companies and poor women farmers are significant. The potential benefit of bridging that gap is bigger whether economic or social, making KM a worthy KM for both private sector actors and NGOs. By working together to find solutions that promote more inclusive businesses and gender equality, both businesses and women can benefit.

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ⁱThis image was previously available here:
<https://www2.deloitte.com/lu/en/pages/strategy/solutions/knowledgemanagement.html#.U05CiGcayc1>