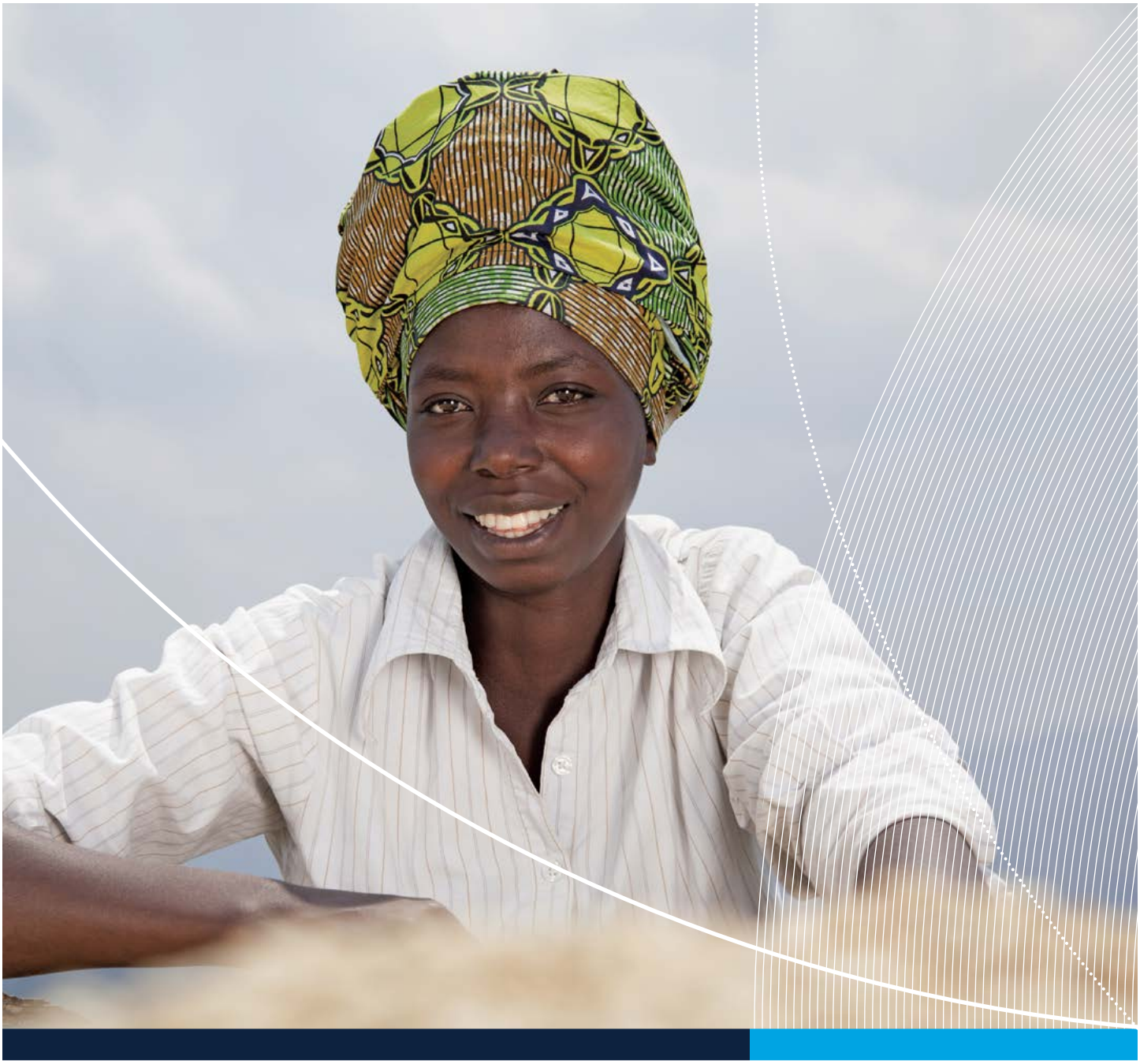

Investing in Women along Agribusiness Value Chains

IFC International Finance Corporation
WORLD BANK GROUP

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ABBREVIATIONS AND ACRONYMS

AFEX	Africa Exchange Holdings
AIRN	Agro-Input Retailers Network
CEO	Chief Executive Officer
CNFA	Cultivating New Frontiers in Agribusiness
Coca-Cola	The Coca-Cola Company
CSISA	Cereal Systems Initiative of South Asia
ECOM	ECOM Agroindustrial Corp.
FAO	Food and Agriculture Organization
FY	Fiscal Year
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIIF	Global Index Insurance Facility
GSMA	Groupe Spéciale Mobile Association
ICT	Information and Communications Technology
IFC	International Finance Corporation
KEPHIS	Kenya Plant Health Inspectorate Service
MAS	Manufacturing, Agribusiness, and Services
MIS	Mobile Management Information System
NGO	Non-Governmental Organization
RUDI	Rural Distribution Network
SEWA	Self-Employed Women's Association
SFD	Seeder Fertilizer Drill
SMS	Short Message Service
UN	United Nations
USAID	United States Agency for International Development
WBG	World Bank Group

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This report calls on the private sector to invest in closing gaps between men and women in agribusiness.

Foreword

IFC, a member of the World Bank Group, has made closing gaps between men and women in agribusiness a priority because of its broad development impact and strong role in poverty reduction. In the fiscal year that ended in June 2016, IFC invested $3.4 billion across the agribusiness supply chain—from farm to retail—to help optimize production, increase liquidity, improve logistics and distribution, expand access to credit for small farmers, and boost gender equality. At the end of the fiscal year, IFC's agribusiness portfolio stood at $5.6 billion. However, despite a significant agribusiness portfolio, gaps between men and women remain and IFC cannot act alone. Including women more equally will require both further partnership with and investments from private sector actors along the value chain.

Fortunately, an increasingly strong body of evidence confirms that gender-smart solutions in agribusiness can increase the sector's productivity and profitability and lead to stronger, more integrated value chains. However, specific manifestations of gender gaps and opportunities vary widely across regions and value chains. Companies require a starting point to identify the best approach for their businesses to tackle gender gaps and seize emerging opportunities.

This report aims to help companies close productivity and efficiency gaps in agribusiness value chains, particularly those in smallholder production. At each stage—(1) input provision and use; (2) production; (3) post-harvest processing and storage; and (4) transportation, marketing, and sales—it outlines key challenges that women face, highlights business benefits, and offers potential private sector solutions. Companies can use this report as a resource to understand how gender dynamics impact their businesses, identify steps they can take to address constraints, and ultimately strengthen their supply chain.

We encourage our agribusiness clients and partners to draw on this report as they define their goals when it comes to closing gaps between men and women in their value chain, thereby creating new opportunities for their companies and the agribusiness sector as a whole.

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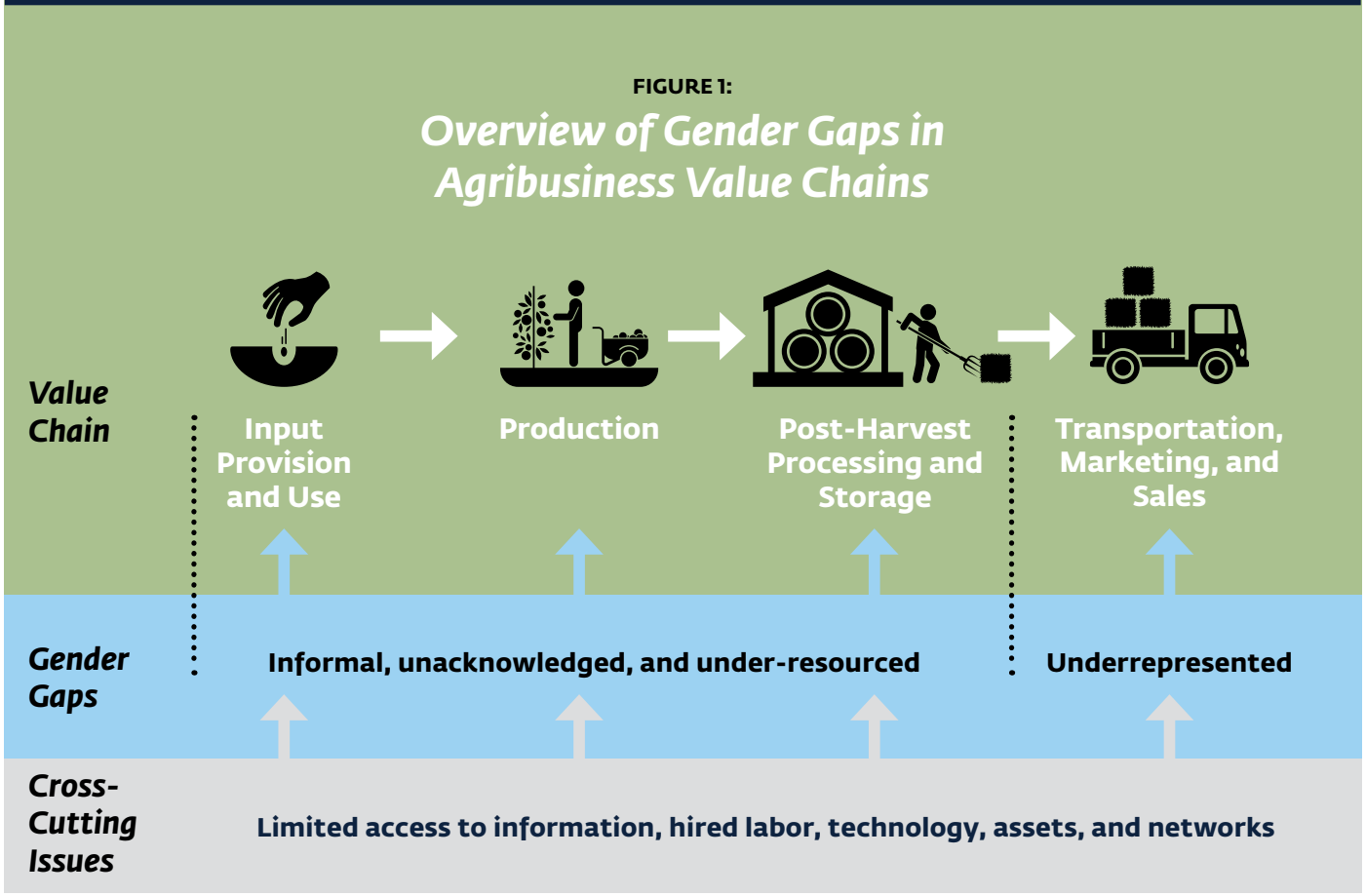
FIGURE 1:

Overview of Gender Gaps in Agribusiness Value Chains



Executive Summary

This Report

In the coming years, the agribusiness sector will navigate a rapidly shifting, and, in many ways, an increasingly challenging context. The sector will face increased demand for agricultural products, a decline in the availability of arable land, effects of climate change, a pivot from global to regional value chains, technical advances, and a decline in the traditional labor force. Navigating these complex trends will mean seizing new ways to increase the productivity and efficiency of agribusiness value chains. One promising way to contribute to both goals is to apply gender-smart solutions.

This report calls on the private sector to invest in closing gaps between men and women in agribusiness. It focuses on four different stages of a simplified value chain: (1) input provision and use; (2) production; (3) post-harvest processing and storage; and (4) transportation, marketing, and sales. At each value chain stage the report helps companies to identify potential benefits from closing gender gaps by reviewing women's contributions and constraints within each stage, outlining gender-smart solutions for the private sector, demonstrating the business rationale for making gender-smart investments, and presenting best practice case studies.

GENDER AND SMALLHOLDER VALUE CHAINS

While there is variation of opportunities and constraints for women and men between regions and value chains, it is possible to identify common trends and insights. Most notably, women play significant roles in production and post-harvest processing that are often key determinants of the size and quality of the final commodities produced. Yet, these roles are often informal, unacknowledged, or under-resourced. Conversely, in transportation, marketing, and sales women are underrepresented outside local markets, playing limited roles that keep them from gaining from the most profitable portions of the value chain. Across the entirety of the value chain, women face limited access to information, hired labor, technology, assets, and networks (see Figure 1). When given equal access, women can maximize their contributions to the sector.

> Women play significant roles in production and post-harvest processing that are often key determinants of the size and quality of the final commodities produced.

FIGURE 2:

Select Business Benefits of Closing Gender Gaps

Value Chain	**Input Provision and Use**	**Production**	**Post-Harvest Processing and Storage**	**Transportation, Marketing, and Sales**
Select Business Benefits	**New input markets** **Improved production**	**Increased yield** **Improved quality**	**Reduced losses** **Strengthened supplier base**	**Concentrated supply base** **New markets**
Overall Business Benefits	**Improved market linkages, and transparent and reliable supply chains**			

PRIVATE SECTOR INITIATIVES

For businesses that depend heavily on agricultural commodities, gender gaps remain a persistent barrier to growth, profitability, and sustainability. Gender gaps in inputs and production can reduce the quantity and quality of the harvest; gender gaps in post-harvest processing and storage can lead to post-harvest losses; and gender gaps in transportation, marketing, and sales can result in fragmented and inefficient markets. Companies that apply gender-smart solutions such as those outlined in this report can reduce their barriers and open a wide variety of benefits, as highlighted in Figure 2.

Recognizing this business case, leaders in the private sector have undertaken initiatives to support women in smallholder value chains. However, to date the majority of investments have been dedicated to women in agricultural production, with fewer targeted investments in other stages of the value chain. In large parts, these companies have invested in smallholders' production capabilities, with the goal of empowering women smallholders while increasing the output and quality of commodity production.

Further private sector initiatives can reinforce investments at all stages of the value chain to open up new business opportunities, and strengthen value chains and the sector as a whole.

These opportunities are not limited to large-scale agribusinesses, or to brands or retailers. While investments have largely been led by international, customer-facing companies, a key message of this report is that numerous opportunities exist for small- to mid-scale businesses to benefit from closing gaps between men and women. The case studies of agri-input micro-franchise Krishi Utsho (Section 2.4) and commodity exchange and storage company Africa Exchange Holdings (Section 4.5) both demonstrate how a wide range of companies are applying gender-smart solutions.

> Private sector investments in closing gaps between women and men can open up new business opportunities and strengthen value chains.

1. Introduction

In a rapidly changing global economy—where women farmers continue to face a range of challenges, affecting the agricultural sector's productivity—agribusiness companies have the opportunity to strengthen their value chains by closing gaps between men and women.

Many of the labor, supply chain management, market access, or sustainability and performance challenges faced by agribusiness companies are, on closer inspection, revealed to be challenges associated with hidden gender gaps. This report summarizes and simplifies the extensive body of literature on value chain development and gender, presenting key entry points for agribusiness companies that want to close gaps between men and women. It describes how companies at all stages of the agribusiness value chain can solve these challenges by understanding and implementing gender-smart solutions, with a focus on companies working in smallholder-led value chains.

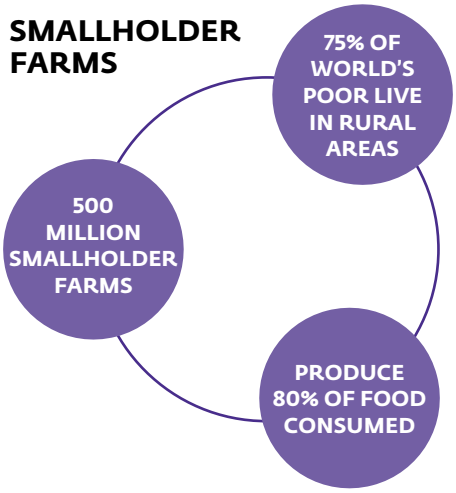
While many publications on gender and value chains address policy makers, this report is focused on the private sector, and importantly, it takes a holistic view, presenting the rationale for companies to invest in women at every stage.

There are many differences between agribusiness value chains dominated by smallholders and other small-scale businesses and those dominated by large-scale, industrial production (see box 1). While gender-smart solutions are relevant for both, this document focuses on the former. The often fragmented, informal, and underdeveloped nature of these chains, as well as the unique difficulties women face within them, makes clear guidance for companies particularly relevant.

This section outlines the trends that are driving increased investment in gender-smart solutions and the approach used here. The subsequent sections highlight specific actions that companies can take to harness business benefits for input provision and use; production; post-harvest processing and storage; and transportation, marketing, and sales.

1.1 Emerging Trends in Agribusiness

The agricultural sector is a significant contributor to the global economy, particularly in emerging markets. About 75 percent of the world's poor live in rural areas, and the majority rely on agriculture as their main source of income and livelihood.[1]



There are approximately 500 million smallholder farms worldwide. Most of them grow their crops on less than two hectares of land, and currently produce 80 percent of the food consumed in Asia and Sub-Saharan Africa.[2] In low- and

middle-income countries, farms smaller than five hectares account for most of the land and produce significant amounts of food. As a result, the sustained productivity of these smallholders is essential in meeting the growing agricultural demand worldwide.

Yet, the agricultural sector, particularly the portions reliant on smallholders, underperforms and does not achieve its full potential. In Sub-Saharan Africa, for example, it accounts for two-thirds of the labor force and 30 percent of gross domestic product (GDP),[3] yet agricultural challenges lead to declining agricultural contributions to GDP.[4, 5, 6]

Smallholders are a heterogeneous group that includes farmers lacking the potential to succeed in commercial farming. Ultimately, it can be advantageous for this specific group of farmers to receive support in leaving the agribusiness sector and look for other employment opportunities.[7] However, enabling small-scale farmers with the potential to succeed in commercial farming can support the performance and development of the sector as a whole. According to World Bank estimates, food production and processing in Africa currently generates over $300 billion annually, but that figure could rise to $1 trillion a year by 2030 if farmers were given the right access to inputs and resources.[8]

BOX 1:

ANOTHER REPORT IN IFC'S SERIES OF PUBLICATIONS, "THE BUSINESS CASE FOR WOMEN'S EMPLOYMENT IN AGRICULTURE"

IFC's publication "The Business Case for Women's Employment in Agriculture" focuses on directly employed women and waged labor, predominantly among larger-scale agribusiness employers. It highlights that when companies invest in women workers, they help improve their labor and talent pool, lower recruitment and turnover costs, increase innovation, and provide opportunities for diverse perspectives in the workforce and management. Moreover, high labor standards and quality employment can increase access to quality buyers. Companies thereby improve their business gains while ultimately supporting inclusive growth for women workers in agribusiness.

Source: "The Business Case for Women's Employment in Agriculture", by International Finance Corporation (2016).

Making this transformation means navigating a rapidly shifting, and in some ways, an increasingly challenging, context for agribusiness that may determine the future of smallholder farming. **Key trends include:**

- **Increased demand for agricultural products, which has led the United Nations (UN) to call for a doubling of food production by 2050;[9]**
- **A drop in agricultural commodity prices which, though benefiting consumers, cuts into the profits of producers;[10]**
- **A decline in the availability of arable land due to factors ranging from soil degradation to urban expansion;[11]**
- **A shift from global to regional value chains, offering new markets for smallholders and other small- to mid-scale actors who may not be able to compete globally;[12]**
- **Technical advances that may either drive a shift to large-scale industrial farming[13] or provide small-scale actors with the platforms they need to gain increased efficiency;[14] and**
- **Climate change that makes farming and the businesses that depend upon it more variable and high-risk, particularly for small-scale and poor farmers who are already likely to be concentrated in vulnerable environments.[15]**

In addition, greater attention will be paid to agriculture because of its substantial environmental impact. Agriculture generates 19 percent to 29 percent of total greenhouse gas (GHG) emissions, a substantial climate change contributor.[16] Moreover, 70 percent of global freshwater use is attributed to agriculture, greatly impacting the scarcity of global freshwater resources.

1.2 Women in Agribusiness

Developing gender-smart solutions in agribusiness represents a crucial strategy to address an increasingly volatile global context and to open new opportunities for smallholder value chains.

Women play fundamental roles in agriculture, comprising over 40 percent of its labor force worldwide.[17] Sector-wide women's labor force participation differs across and within countries and regions, from 20 percent in Latin America to 50 percent in parts of Africa and Asia.[18] Their involvement and success is critical to the sector's competitiveness.[19] Yet small-scale women farmers continue to face specific constraints that limit their contributions, including:

- *Limited access to hired labor, equipment, technology, training, finance, and markets;*
- *Restrictions on land ownership and tenure that limit expansion opportunities and lead investors to deal primarily with men;[20]*
- *Sexual harassment and violence; and*
- *Household, community, and care responsibilities, which are essential to rural wellbeing but have an important effect on women's time use.[21]*

Moreover, women traditionally participate in value chain nodes with lower economic return than men. Women's participation in the production of a specific crop is oftentimes related to the crop's assumed value, and is thereby usually limited to local consumption and the local market. Men are more likely to participate in export commodities, or in markets where there is a greater economic return.[22]

By addressing those direct and indirect constraints, firms can turn these challenges into successful business opportunities. Investing in women can increase their contributions, and positively impacts the performance of agribusiness companies by reducing the industry's productivity gaps. Among other benefits, it can:

- *Increase the productivity of a company's labor force and/or supply chain;*
- *Improve the quality of company operations and access to premium markets;*
- *Widen the available talent pool; and*
- *Strengthen brand reputation and customer loyalty through ethical sourcing and compliance with environmental and social standards.*

1.3 Methodology and Approach

This report provides the rationale for agribusiness companies to recognize the market value and business benefits of closing gaps between men and women and investing in women smallholder farmers across their value chains. It is global in scope but primarily addresses small-scale farming in emerging markets, where economies depend heavily on agriculture.

The report findings are primarily based on desk research of gender, agriculture, and value chain literature, as well as on case studies that highlight specific examples of successful gender initiatives in agribusiness companies. The report has been informed by interviews with more than 100 stakeholders, ranging from companies to non-governmental organizations (NGO). It further reflects IFC client and company experiences in closing gaps between men and women in agriculture at each value chain step. The report benefited greatly from insights and peer reviews by more than 15 practitioners and subject-matter experts.

Agribusiness value chains are complex and highly variable by region and commodity. As a result, business

BOX 2:

WOMEN AND CARE

One of the less frequently cited constraints for women in agribusiness is that of care. Women's disproportionate responsibility in supporting children and elders can substantially impact their productivity by reducing the number of hours they have to dedicate to income-generating activities. For instance, a study in Uganda found that care activities accounted for half of the difference in productivity between male and female-owned average plots, after taking factors like increased access to inputs into account.

Source: "Investigating the Gender Gap in Agricultural Productivity: Evidence from Uganda" by Daniel Ali, Derick Bowe, Klaus Deininger, and Marguerite Duponchel (2015).

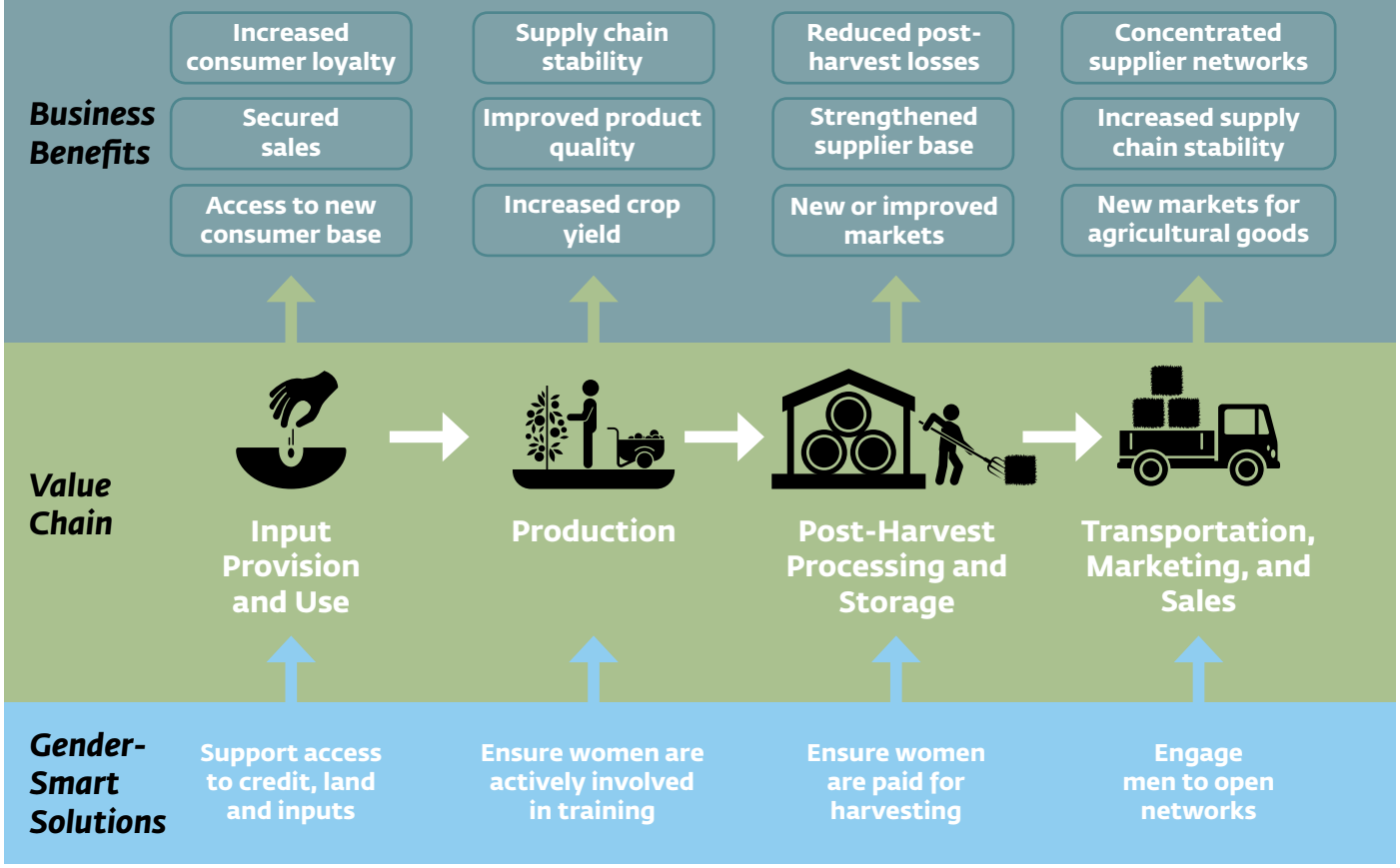
drivers, constraints that women face, and company recommendations vary according to the geographic and local context. To address this complexity and still represent a global scope, this report is based on four simplified value chain steps: input provision and use; production; post-harvest processing and storage; and transportation, marketing, and sales (see Figure 3). It outlines:

- *Challenges that businesses face;*
- *Key activities and roles of women;*
- *Specific constraints women face; and*
- *Recommendations for companies on how to reap economic benefits by closing gaps between men and women.*

Specific case studies highlight how companies have successfully put gender-smart solutions into practice. Companies that wish to leverage business benefits can draw on this report, combined with individual value chain mapping as a first step to determine which action might be best suited to the distinct needs of the value chains in which they operate. Still, due to value chain complexity, further in-depth research is required to provide customized client solutions and reflect specific market needs and socio-cultural norms.

FIGURE 3:

Reducing Gender Gaps—How the Private Sector Can Help

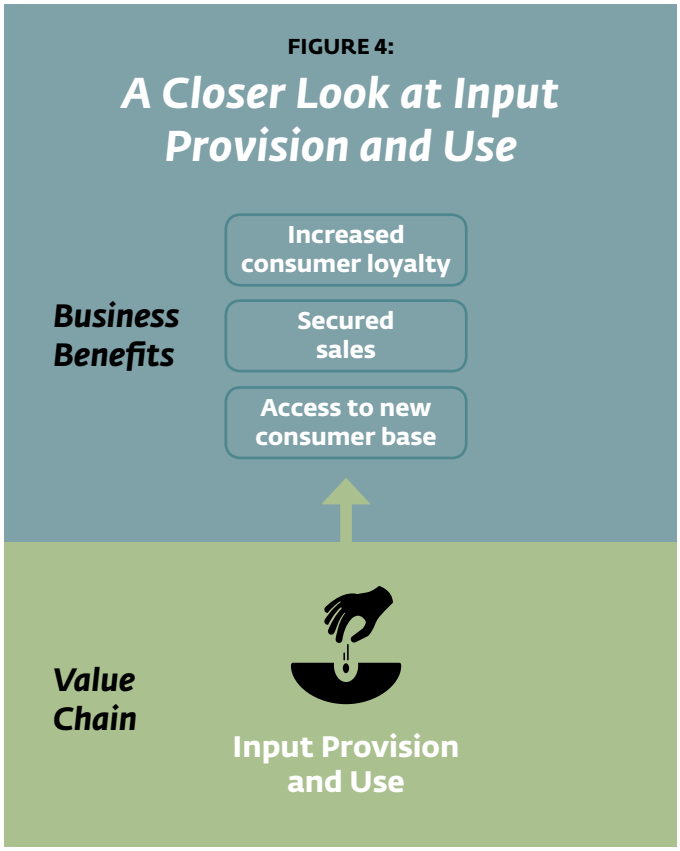


2. Input Provision and Use

2.1 Overview

One major factor that determines agricultural productivity is the access to high-quality inputs. Limited access represents a key barrier to women. Improving women's access to the right inputs not only strengthens production processes but also, for input sellers and marketers, opens up new markets.

Agricultural inputs include resources used in farm production, such as seeds, fertilizer, equipment, and energy sources. All play an important role for agricultural value chain performance and sustainable growth for agribusinesses.



Agribusiness companies need to ensure the availability, access, and correct usage of their products to increase harvest and production volume for farmers. This ultimately maximizes companies' profits and returns on investment through increased sales, consumer satisfaction, and brand loyalty.

In some contexts, input suppliers are challenged by counterfeit agricultural inputs and difficult access to rural and small-scale farmer communities. Strategic ways of addressing those challenges and accessing the consumer market of women farmers can be leveraged through the use of Information and Communications Technology (ICT), agro-dealerships, and targeted marketing.

2.2 Women's Key Value Chain Activities in Input Provision and Use

In many value chains, women may be responsible for input application but may not have direct access to high-quality inputs or knowledge of best practice.

In input provision and use, women play a variety of roles: They are active as small-scale farmers who sell and provide to agricultural input supply companies, they act as agro-input retailers and agro-dealers, and they are hired as extension workers and rural agro-agents.[23] Women's activities are well-suited to assist input supply companies and enable an effective and wide reach of companies' products to large consumer markets. Women represent significant potential to upgrade value chain performance and build input markets, benefiting women and input supply companies at the same time.

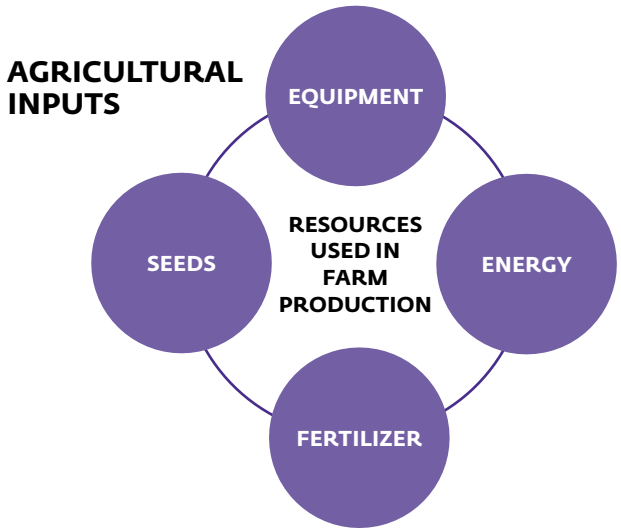
To improve the quality of their yields, women farmers need access to inputs and knowledge of best practice for input application, which ultimately benefits agribusiness companies as it leads to secured quality and sustainable supply of outputs. While limited access to inputs and knowledge impacts most smallholders to some degree, women's comparative disadvantages multiply this constraint. Companies can take advantage of this market niche as women and smallholders are traditionally underserved markets for agricultural inputs.[24]

2.3 Constraints Women Face in Input Provision and Use

Small-scale women farmers face a number of constraints at the level of input provision and use. They have proportionately less access to high-quality inputs, equipment and technology, technical information on appropriate usage (e.g., quantity and timing of application), hired labor, and knowledge of modern farming practices.[25, 26] For instance, research presented in the World Bank Group's *Levelling the Field* report has shown that women not only have unequal access to inputs but also face unequal returns from their inputs.[27]

ACCESS TO INPUTS AND THEIR CORRECT USAGE

Women tend to use lower quality inputs, such as poor-quality seeds or fertilizer, and have restricted access to knowledge of their appropriate use, which translates into unequal returns from those inputs. In Ethiopia, the World Bank found that women use overall less fertilizer than men, use lower-quality fertilizer, and apply it incorrectly, which leads to lower agricultural productivity and outputs.[28] Reasons for this are related to the affordability of inputs and intra-household choices, which can limit access to financial means and credit to purchase higher quality inputs, and also to limited access to knowledge and extension services. Addressing those challenges and inviting women to participate in demonstration plots, for example, allows input supply companies to secure customer loyalty of female farmers.



ACCESS TO TECHNOLOGY AND MACHINERY

Modern farming machinery can drastically improve farm productivity but purchase costs are high. Credits and loans are, in many contexts, subject to collateral requirements which due to land title sensitivities oftentimes do not lie with the woman. Typically, household members with economic decision-making power and access to credits and loans purchase laborsaving tools and machines. Enabling women's increased access to machinery and tools can reduce the need and amount of labor on their farms, which frees up time for other responsibilities or leisure. This can also be a way of bypassing the difficulties of hiring labor, which in some cultural contexts is a constraint for women farmers.[29] Supporting the creation of women farmer associations can help members to lend or purchase such machines as a group.

ACCESS TO INFORMATION, TRAINING, AND KNOWLEDGE

According to World Bank research, women farmers have less access to agricultural information and extension services. Rather, they receive information on farming techniques through their husbands or informal sources, as training is often directed at head

of households.[30] Training can be more effective when adapted to women's capacities, literacy rates, schedules, and needs as they may otherwise not be able to attend due to conflicting domestic responsibilities or limited mobility. Providing training on farm management and an understanding of farming as a family business benefits male and female farmers. The Food and Agriculture Organization (FAO) found that women received only 5 percent of extension services.[31, 32] Though this figure can vary, it inevitably reflects gender gaps: for instance, in Ethiopia and India, 20 percent and 18 percent of extension services reach women respectively, yet in Ghana only 2 percent of such services do so.[33, 34]

Increasing the number of female extension agents is one way of improving women's access to extension services, as cultural norms may otherwise restrict women farmers from engaging with male agents. Still, the United States Agency for International Development (USAID) states that globally "only 15 percent of extension agents are women".[35] Some of the challenges in recruiting women officers are institutional biases and the low number of female students with agricultural science degrees; the remote location of field assignments, which can pose security threats, such as threats of sexual harassment; and socio-cultural norms affecting women's mobility or interaction with men.[36]

BOX 3:

BUSINESS BENEFITS FOR COMPANIES FROM CLOSING GENDER GAPS IN INPUT PROVISION AND USE:

- **Increased consumer loyalty**
- **Secured sales**
- **Access to new consumer base**
- **Connection of farmers to output markets**

2.4 Recommendations for Company Actions in Input Provision and Use

Input supply manufacturers can benefit from supporting the smallholder consumer segment's growth as an input market by increasing the capacity of women farmers to access and efficiently use their inputs. The result, recognizable augmentation of production and profits, and increased professionalism and management of farms as a (family) business, can ultimately move smallholders from subsistence farming to increased market-orientation and commercialization.[37] When input companies ensure that their products are accessible, affordable, and safe, they are likely to realize increased input sales. Agro-dealerships, franchise networks, and extension agents represent ways for input companies to access remote rural communities and ensure the correct application of their input products. Addressing women's needs and preferences in training and marketing can increase consumer loyalty. The following solutions can support companies and farmers to meet market demand and reach improved performance and production:

SUPPORT WOMEN IN OPENING AGRO-DEALERSHIPS AND PROVIDE TRAINING ON THE USE OF INPUTS

Agro-dealers represent the link between input suppliers and farmers, and can link farmers with output markets and traders.[38] Depending on their size and focus, agro-dealers can provide a variety of products, ranging from high-quality seeds, machinery, and fertilizer, to agricultural information and veterinary services.[39] Further, they can buy in bulk produce from farmers, and sell it to commodity marketing companies further up the value chain. In Kenya for example, women make up 30 percent of the 10,000 agro-dealers in the country, a relatively high number in comparison to other countries in the region.[40] Using the direct link to their customers, agro-dealers are a reliable contact point for farmers to access certified inputs and receive training on the application of modern farming inputs. For example, in Bangladesh, **Cultivating New Frontiers in Agribusiness (CNFA) has increased the availability and quality of inputs for farmers by establishing a network of agri-input retailers (AIRN)** that provides training on the safe application and storage of inputs to over 1 million farmers, reaching $100 million in sales. To increase women's participation as dealers, training classes have been specifically adjusted to women's needs, reaching 300 female retailers.[41] Trends lean toward using shops of agro-dealers as service and information hubs for women and men farmers, and as training facilities in which dealers train farmers on input use.[42] Training women as agro-dealers, potentially in partnership with an experienced NGO, allows companies to have a presence in remote and rural areas. This is likely to increase brand loyalty due to the correct use of products, creating product demand. It also allows the company to have direct access to its consumer base because women farmers may prefer the interaction with other women in some cultural contexts. Moreover, enabling men and women as agro-dealers and agents can increase the availability of products, improves women's access to inputs, and the connection of farmers with output markets.

DEVELOP TARGETED ICT OUTREACH AND PRODUCTS FOR CONSUMER LOYALTY

Counterfeit and low-quality agricultural input products are a significant problem to input supply companies, challenging their consumers' brand loyalty. To address this problem, and enhance loyalty and connections to customers, the **Kenya Plant Health Inspectorate Service, or KEPHIS, provides the following solution: Farmers can verify that they bought from a licensed dealer by sending a Short Message Service (SMS) with the input dealer's license number to KEPHIS**, which the system then confirms or declines.[43] ICT helps companies to manage distribution networks and provide technical support to clients. It can further trigger cross-sectoral partnerships, such as with telecommunication providers, which enables companies to reach farmers by using mobile SMS features for product updates, farming tips, and information on retailer locations,[44] and ultimately create input markets. Farmers are able to receive real-time information on current market prices, weather forecasts, and pest outbreaks. The digital divide between men and women in access to ICT still persists.[45] Companies that address this information gap, and target male and female consumers equally, will be able to reach their entire consumer base.[46]

ENABLE USE OF MOBILE BANKING APPLICATIONS AND PRE-PAID VOUCHERS

Mobile banking applications have the potential of freeing up time for farmers by eliminating the need to travel long distances to pay for agricultural inputs or services. This can have a significant positive impact on women farmers who face an increased risk because of lack of transport safety, restricted mobility due to socio-cultural norms in some contexts, and time constraints from domestic responsibilities. **MRI Agro Zambia**, a seed input supplier, **uses an electronic pre-paid voucher system, which allows farmers to pre-pay for inputs at a time during the year when cash is available**, leading to increased and secured sales for companies in that period. As farmers have to register for the voucher system, it allows the company to create a customer database for targeted marketing and product promotion.[47] Using gender-disaggregated data collection allows companies to further distinguish their customer needs and specifically target women as a new consumer base.

INCREASE CONSUMER REACH THROUGH WOMEN AGRO-AGENTS

Input supply companies need to enable quality and availability of their agricultural inputs for farmers[48] and have the opportunity to effectively reach their women's consumer market through women agents. Owing to norms of social contact, companies have found it useful to check with women farmers whether they prefer being trained by women or men.[49] For example, women agents trained as salespersons or extension officers can engage with women farmers, thereby attracting new clients, creating brand loyalty, and ensuring the correct use of inputs and outreach of key agricultural services.[50] **Land O'Lakes**, for example, **trained women as para-veterinarians in artificial insemination for their operations in Tanzania**, and as a result not only reached women farmers but moreover identified that women's insemination efforts were highly successful, reaching high pregnancy rates in cows.[51]

ADJUST TRAINING CONTENT AND TIMING

Demonstration plots and farmer field days are a common way for input supply companies to market new products and provide technical information on the appropriate use and storage of their products. To reach the maximum number of farmers, the timing, language, and location should be adjusted to women farmers' needs, as domestic responsibilities can restrict them from traveling far from their homes. Arranging safe transport, along with community or farm-based childcare, could also encourage women's participation. Companies can offer training conducted by female and male trainers on the proper use of inputs, and can adapt these classes to the needs of men and women farmers, thereby leading to greater yields and improved quality crops, and logically, to a more sustainable supply chain.

INCREASE SALES BY TAILORING PRODUCTS AND PACKAGING TO WOMEN FARMER NEEDS

Women farmers should be understood and identified as a consumer segment, with specific preferences and spending potential, which requires targeted marketing and promotion. Depending on the local context, the role of women in household budgets and spending can range from playing no role at all to a joint or main role. When women farmers are included in marketing activities along with their husbands or in social activities that involve women, then they are more likely to make informed purchase decisions. **To increase the willingness of both men and women farmers to purchase new brands**, companies such as **Bayer, BASF, and Syngenta are breaking down the bag size for fertilizers and pesticides**.[52] Selling those through an input supply hub[53] makes it affordable for small-scale farmers to purchase quality inputs and allows input manufacturers to reach a greater number of customers, especially women farmers who can face limited access to funds.[54] Companies may use promotional coupons to introduce new products and

increase customer uptake. A study in Kenya found that women buy smaller amounts over a certain time, but end up purchasing the same quantity as men over time.[55] Selling smaller quantities strengthens the technique of micro-dosing, which allows productivity increases at low costs, and supports climate-smart agribusiness as a rise in greenhouse gases can occur from fertilizer over-use.[56]

INCREASE ACCESS TO AGRICULTURAL TECHNOLOGIES AND MACHINERY

Improving women farmers' access to agricultural technologies and time-saving machinery can significantly increase their contributions to agricultural growth. To support women farmers in accessing machinery and improve the overall adoption of technology in Bangladesh's agribusiness sector, the **Cereal Systems Initiative of South Asia (CSISA), developed a seeder fertilizer drill (SFD)**. Compared to traditional drills, SFD works with high precision and simultaneously prepares the land, and plants and fertilizes crops, saving cultivation costs for the farmers. **Private sector partner RFL**, a local agricultural retailer, **markets the drill at discounted prices under the project's umbrella to make agricultural machines affordable to the rural population** and popularize the use of machines in local agribusiness—particularly among women farmers. The project enables, for example, local women cooperative leaders to purchase the drill at subsidized prices and its female cooperative members to rent and use it. Returns are then shared in 51 percent for the owner, and 49 percent for the user.[57, 58] The project further trained over 400 women in the use of agricultural machinery, which led to female training participants renting machinery and providing farmers with access to time-saving technologies and equipment.

2.5 CASE STUDY:

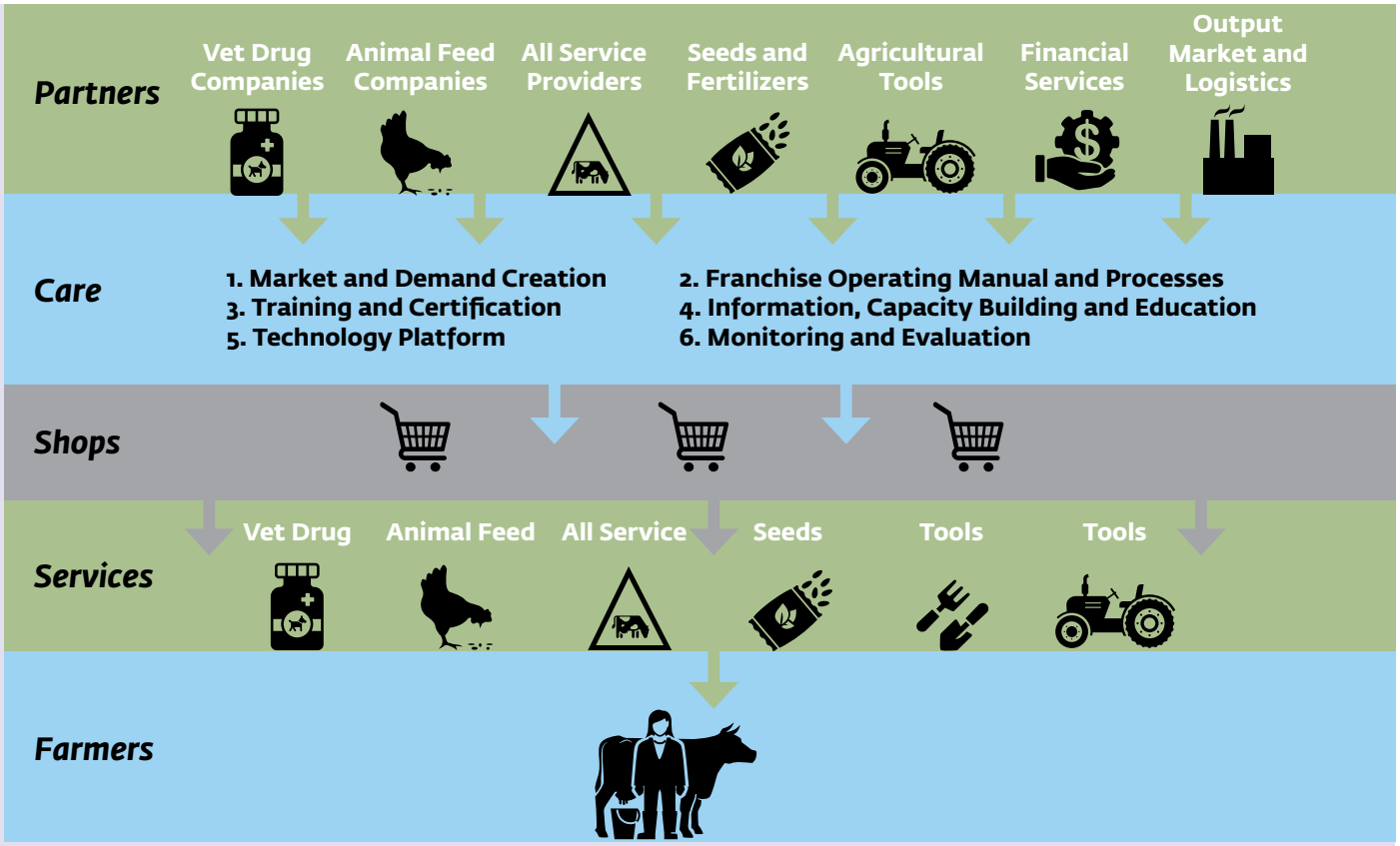
Krishi Utsho Builds Markets for Agricultural Inputs through Micro-Franchising

Bangladesh's small-scale farmers, those who own two hectares or less, operate 96 percent of the nation's farms.[59] However, these farmers often lack access to crucial inputs and services. This is particularly true for women farmers, who do not have the freedom of movement to travel to regional markets, are less likely to have the knowledge of best practices, and are less likely to have the funds to pay for inputs or services, yet provide the majority of farm work. In addition to decreasing farmers' productivity, this asymmetry limits growth for input and service providers.

The Krishi Utsho social enterprise built a new business that provides agricultural inputs and services to small-scale and women farmers to reverse this market failure. The company used several methods to open new markets.

FIGURE 5:

Microfranchise Model, as Used by Krishi Utsho in Bangladesh



- *First, it established a series of local shops using a micro-franchise model that allowed stores to be owned and operated by entrepreneurs already embedded in rural farming communities while maintaining standards under the Krishi Utsho brand.*
- *Second, it negotiated with key input providers to create dedicated products, such as small feed or fertilizer packets, that were of guaranteed quality while being affordable and accessible for small-scale farmers.*
- *Third, it linked farmers with key services such as veterinary care or sales points for dairy farmers by hosting them at the franchise locations.*
- *Fourth, it targeted customers, particularly women, whose needs were not met by existing markets.*

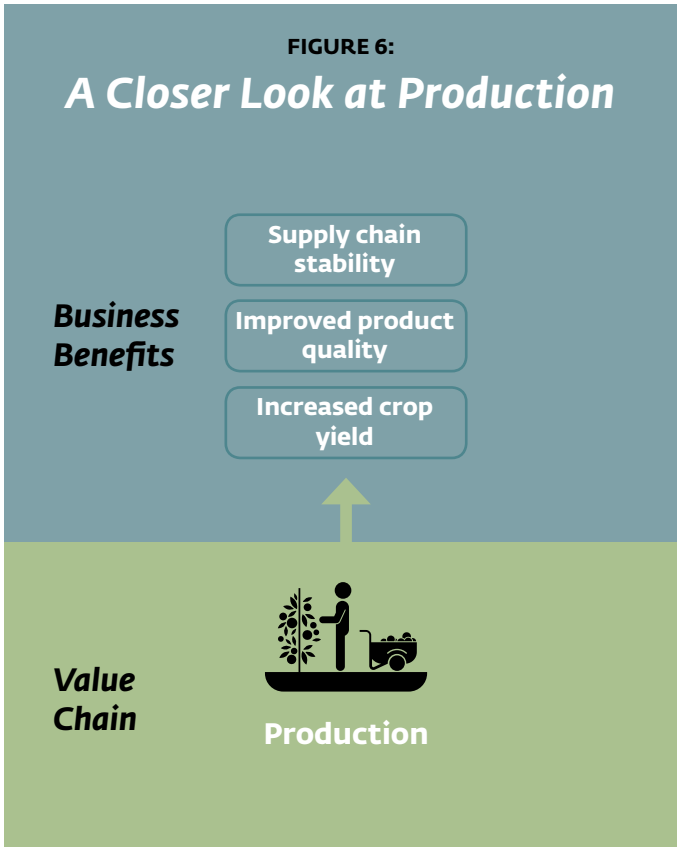
Krishi Utsho's model has proven a success for the business and for local farmers. It currently operates 112 stores across Bangladesh, with plans for expansion to 230 stores by 2018. Agricultural input providers have also benefited through a successful path for last-mile distribution, through Krishi Utsho's sales of over $500,000 in its first three years of operations. Finally, women and small-scale farmers benefit through reliable, affordable, and accessible inputs and services.

The Krishi Utsho franchise network is a social enterprise owned and operated by CARE International Bangladesh. For more information, visit **http://www.carebangladesh.org/** *or write to Maruf Azam, General Manager, Krishi Utsho at* **Maruf.azam@care.org**.

3. Production

3.1 Overview

For this report, agricultural production includes land preparation, cultivation, and harvesting. Looking into smallholder production patterns is specifically relevant for agribusiness firms that source predominantly from smallholders for their production in sectors such as cocoa or rice.[60] Smallholders can represent either the primary source of supply or significantly supplement the production of large-scale farms.



Specific challenges that small-scale farmers face include:

- *Secured access to good-quality inputs and input financing;*
- *Lack of market information and access;*
- *Increasing weather unpredictability arising from climate change;*
- *Outmigration of farm workers from rural to urban areas;*
- *Aging farming communities; and*
- *Increased demand for food products from growing emerging markets.*

These challenges require efficient and sustainable agricultural solutions, which agribusiness lead firms need to ensure for the sustainability of their supply chains.

3.2 Women's Key Value Chain Activities in Production

Women comprise over 40 percent of the agricultural labor force worldwide[61] as farmers, entrepreneurs, and laborers, and are significant contributors to agribusiness supply chains. In addition to women's roles and employment opportunities on large commercial farms, the perspective of women as small-scale farmers brings compelling business opportunities. Women's activities in agricultural production vary greatly across commodities and regions. For example, Indonesian women provide the majority of the labor in rice farming, but less than one-third of the labor for rubber.[62] Moreover, women are oftentimes paid less than men for the same work, and are over-represented in informal, unpaid, part-time, and seasonal work.[63]

Because women are an important source in agricultural production, leveraging their potential and providing them with full access to assets, as well as training, land,

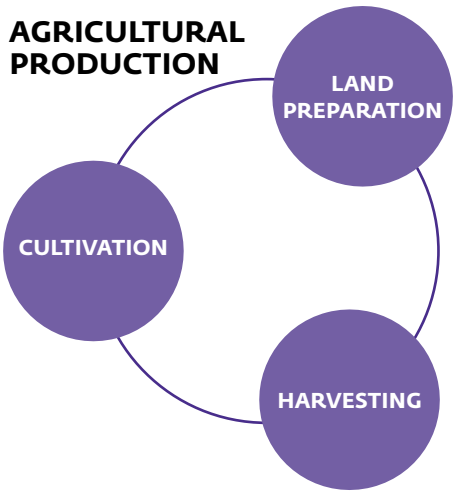
and inputs, can help the agribusiness industry to scale its productivity and meet its growth targets.[64]

3.3 Constraints Women Face in Production

Women's agricultural productivity and yields are 20 percent to 30 percent lower than men's because of well-documented constraints such as restricted access to quality seeds, equipment, hired labor, technology, training, and markets.[65] These constraints limit the contributions women make to supply chains and ultimately affect the chain's stability. It is important to note that some of these constraints affect men as well, but generally to a lower extent because of factors such as socio-cultural norms. Most of the constraints that women face are interlinked: For example women's lack of land titles and collateral limits their access to finance, and women's lack of finance affects their ability to purchase agricultural inputs.

ACCESS TO TRAINING, EXTENSION SERVICES, AND TECHNICAL INFORMATION

Lower levels of access to education and training hinder women farmers' productivity. Although indicators on girls' school attendance have improved, literacy rates for rural women can be as low as 30 percent in some African countries.[66] This is partially related to the relatively high average age of farmers, as younger generations look for employment opportunities outside of farms. Low literacy rates and limited access to cooperatives make agricultural and business training for women more difficult. In Africa for example, women receive less than 10 percent of agricultural extension services.[67] As a result, women farmers are often unable to benefit from knowledge exchanges about improved agricultural practices, sustainable farming, correct use of inputs, and industry trade practices.



ACCESS TO FINANCE AND MOBILE BANK ACCOUNTS

Women farmers tend to have limited access to financial services and products (e.g. loans, insurance, equity) which prevents them from investing in their farm, purchasing critical inputs and equipment, and hiring additional labor to enhance productivity. For example, in Africa, women receive "less than 10 percent of the credit offered to small-scale farmers."[68] The limited access to finance is often related to lack of collateral (land or other assets) needed to borrow money from financial institutions, enforced by limited financial literacy.[69] In addition, the lack of bank branches in many rural areas further limits their networks and access to financial products.

ACCESS TO LAND OWNERSHIP

According to the World Bank Group's *Women, Business and the Law* report 2016, 155 economies have at least one legal restriction on women's economic opportunities, such as limitations on owning property.[70] In many economies, women face restricted access to land ownership, and overall own smaller plots with lower quality of soil. For example, in Côte d'Ivoire, while women legally have equal land ownership rights, in practice they are rarely landowners due to customary practices and a lack of awareness of these rights. Further, marrying under common law, which most couples do, gives men the sole right to administer common property held in the marriage. The lack of land and collateral, as well as lack of formal personal identification documents, prevent women from claiming ownership on the land they work. As a result they find it difficult to get credit.[71] Research by the World Bank Group shows that when women own land, it gives them an incentive to invest in their land.[72]

ACCESS TO COOPERATIVE LEADERSHIP AND PARTICIPATION

Cooperatives and farmer associations play a vital role in establishing bargaining power for their members, creating avenues for resource sharing, providing training facilities for good agricultural practices, creating networks, and encouraging access to markets. As cooperative membership oftentimes requires collateral and land ownership, women's participation and leadership tends to be limited. Cooperative access varies across the world, although disproportionately low participation by women is widespread. In Ethiopia, for example, women comprise about 20 percent of cooperative membership, despite women making up approximately half of the farmers in the country.[73] In 2012, a census of Paraguayan cooperatives undertaken by the Observatorio del Sector Cooperativo Paraguayo, demonstrated that out of 45 surveyed agricultural cooperatives, only one was led by a woman.[74]

LIMITATIONS ON TIME AND MOBILITY

On average, rural women in Africa, Asia and the Pacific work about twelve hours per week more than men. This is a result of the additional time they spend tending to unpaid domestic responsibilities (e.g., collecting water and fuel, caring for children and other family members, preparing food, and cleaning) in addition to on-farm and off-farm work.[75] A study in Mozambique found that women spent an additional six hours per day, relative to men, performing domestic tasks—in spite of spending nearly the same amount of time performing non-domestic work.[76] These responsibilities curtail how long women can be away from home, where they can travel, and leave women "time-poor," not only limiting their time to perform farming duties but also limiting their availability and mobility for activities that would enhance their farming, such as training, acquiring inputs, supervising hired labor, building extended networks, and reaching markets. The need for more equitable use of time in households becomes clear.

BOX 4:

BUSINESS BENEFITS FOR COMPANIES FROM CLOSING GENDER GAPS IN PRODUCTION

- **Increased supply chain stability**
- **Improved product quality**
- **Increased crop yield**

ACCESS TO ICT AND MOBILE TECHNOLOGY

Through Internet access and mobile technology, farmers are able to receive and search market information. Women in rural areas of developing countries remain less connected because of barriers of mobile phone ownership and usage, to the detriment of their productivity. According to the International Telecommunication Union, the Internet gender gap is about 25 percent in developing countries overall, but higher in Central Asia (30 percent) and sub-Saharan Africa (40 percent). Further, women are 23 percent less likely than men to own mobile phones in Africa; the number climbs to 24 percent in the Middle East and 37 percent in South Asia.[77] When women are technologically connected, they receive vital information such as commodity prices and weather information, which is a significant support in becoming fully productive members of the agribusiness value chain. The Groupe Spéciale Mobile Association (GSMA), which represents the interests of major mobile operators worldwide, identified mobile-enabled agricultural services ("mAgri services") for women in developing countries as being the upcoming and substantial, but yet underserved, market opportunity for the mobile industry.[78]

ACCESS TO LABOR-SAVING TECHNOLOGIES

Instead of labor-saving technologies such as agri-processing tools and mechanized farm equipment, which can ease farmers' workload and increase labor productivity, many women smallholders depend on labor-

intensive hand tools and human labor for their work.[79] The main constraints to changing this pattern rest in scaling up the availability, accessibility, and adoption by women of such technologies.[80] Reasons for their limited access to technology and energy, and ultimately use and adaption of agricultural production tools is manifold. They stem from lower educational levels and information on labor-saving technologies and tools, socio-cultural norms, and limitations in the acceptance of women using specific technologies, affordability, and handiness and manageability of certain tools for women.[81, 82]

Successes can be found, however. For example, a village in Zimbabwe's Honde Valley invested collectively in village pipes and sprinklers to irrigate crops. Since women and girls are responsible for fetching water in this cultural context, their collective investment had a significant impact on women's time, enabling them to engage in further income-generating activities.[83]

Lifting constraints to women's participation and equally including women into value chains allows companies to add value to their operations and take advantage of women's (partially untapped) potential. Companies can act in many ways to increase women's productivity, and thereby improve their own business.

> Companies can undertake a variety of actions at the production stage. An integral part of each intervention is a gender mapping, a tool aimed to identify the distinct roles which men and women play in a company's value chain.

BOX 5:

THE COCA-COLA COMPANY, PROJECT NURTURE

From 2010 to 2015, Coca-Cola implemented a program in Kenya and Uganda—in partnership with Technoserve and the Bill and Melinda Gates Foundation—to help mango and passion-fruit farmers improve their production and link local food processors to markets. As part of the program, the farmers, many of whom were women, adopted new technologies and practices—boosting their revenue by an average of 142 percent. In addition, two processors were approved as suppliers, adding to Coca-Cola's supply chain.

Source: "Project Nurture" by The Coca-Cola Company and Technoserve (n.d.).

3.4 Recommendations for Company Actions in Production

Companies can undertake a variety of actions at the production stage. An integral part of each intervention is a gender mapping, a tool aimed to identify the distinct roles which men and women play in a company's value chain. Through targeted training, access to finance and insurance, and partnerships, agribusiness firms are able to achieve various business benefits at the production stage: Increased farmer productivity, higher quality and quantity of produce, and a stable supply chain. Further recommendations are highlighted below:

ASSESS "WHO DOES WHAT" AMONG MEN AND WOMEN IN THE VALUE CHAIN

Value-adding activities and roles that women and men farmers perform in companies' value chains vary across countries and commodities. While conducting a value chain analysis and assessment of labor allocations,

companies are able to identify the specific actors in their value chains and scale the value they add to the processes. Companies are thereby able to develop targeted interventions and maximize their impact and profitability. Through the assessment of labor allocations in their value chains and use of gender diagnostics, IFC clients such as ECOM Agroindustrial Corp. Ltd or Mondelēz International Inc. have been able to detect challenges in their value chains and make informed decisions to address those. **ECOM, for example, used a gender-mapping tool to identify women's roles in their coffee supply chains.** Based on its results, **ECOM and IFC developed gender-specific training materials, and provided training for trainers for ECOM staff and local communities** (see Box 6).[84]

BOX 6:

ECOM AND IFC

Ecom Agroindustrial Corp. (ECOM) is one of the world's top three coffee traders as well as one of the world's largest coffee millers. However, ECOM realized that in order to meet growing demand, it needed to partner with the entrepreneurs that provided the company's coffee. Working with IFC in Indonesia, ECOM identified gender gaps amongst the coffee producers who the company sourced from as a key barrier to growth. Though women make up 80 percent of coffee workers in Indonesia, they are often excluded from trainings on coffee cultivation, processing or marketing. By developing gender-specific trainings for its staff and local suppliers, ECOM, with support from IFC, was able to drastically increase the productivity of coffee farmers. Productivity increased 131 percent for groups which trained both men and women, whereas it increased 95 percent for men-only groups.

INCREASE SUPPLY CHAIN SUSTAINABILITY THROUGH TRAINING ADAPTED TO WOMEN'S SCHEDULES AND MOBILITY

To increase small-scale farmers' productivity and professionalism in companies' supply chains, farmers need to understand their farm management as a business. To include men and women in business and financial training, content should be adapted to their skill sets and capacities. Depending on the context, women and men can benefit greatly from receiving trainings separately from one another. Moreover, it can be beneficial for women if their training sessions are delivered by female trainers, and adapted to women's schedule, mobility, their level of literacy and language skills. **Improving women farmers' capacities through training in modern farming techniques is a practical way to increase crop yield and quality, as seen in Coca-Cola's program**[85] (see Box 5).

SEEK TARGETED WAYS TO INCREASE WOMEN'S ACCESS TO FINANCE

Collateral is often required by financial institutions for loan products, which can put women at a disadvantage, based on limited land ownership. Agribusiness lead firms can cooperate with financial institutions to revise collateral requirements and develop alternative loan programs. There are many different ways to increase access to finance, such as micro-finance and micro-loans, risk and micro-insurance facilities, and mobile payments. In many cases, greater access to finance will lead to greater access to key inputs and equipment. Giving women the capital needed to invest in these can lead to improved quality of their outputs, which benefit agribusiness firms.

To address financing challenges faced by farmers, institutions such as IFC have developed agri-finance instruments, such as risk sharing facilities. For example, to support 70 coffee farmer cooperatives in accessing loans in Ethiopia, **IFC has partnered with NIB International Bank S.C., and extended a risk-sharing facility worth up to $10 million to NIB**. The facility aims to generate $17 million in export revenues and create 2,000 jobs, of which over 50 percent will likely be occupied by women. **It will allow more farmers to qualify for loans as IFC and NIB are sharing the risks related to financing and lending to coffee producers.**[86] Farmers can be assessed based on a risk evaluation that categorizes them into low-, medium-, and high-risk groups. High risk is indicated by low crop diversification, and generation of only seasonal income, which can depend on harvest variations. This limits farmers' ability to repay interests and loans with equal repayment rates and structures, instead leading to payments of lump sums at the end of crop cycles.[87] This demonstrates that it is crucial for financial institutions to develop targeted products for high- and low-risk farmers, depending on farmers' needs. They can further close the finance gap and tap into the women's market with targeted offers. Receiving access to mobile bank accounts and payments can increase women's economic decision-making and spending, creating new markets and independent consumers for companies and financial institutions.[88]

COOPERATE AND LEVERAGE EXPERTISE OF PARTNER ORGANIZATIONS

In many contexts, there are already organizations in place that support women farmers—these include cooperatives, NGOs, government extension services, and other types of associations. Partnering with these organizations can help companies to quickly achieve impact and save costs. NGOs may have developed significant subject-matter expertise on the customs and culture of the local community, which helps to maximize effectiveness when designing and implementing programs.

BOX 7:

MARS AND CARE INTERNATIONAL

Facing a future cocoa demand-supply gap that could negatively impact its chocolate business, Mars has implemented a comprehensive program to secure its supply chain, with increasing inclusion of women as a key feature of this program. The company has partnered with CARE International to provide loans and access to finance for women in 25 cocoa communities. At the same time, Mars has also developed Farmer Field Schools and technical support service for women farmers. These activities have added women farmers into Mars' supply chain, while also improving the productivity of women farmers already in its supply chain, which has added diversification and stability to Mars' cocoa supply, and better positioned the company to increase its chocolate production.

Source: "Mars Women's Empowerment Plan" by Mars Chocolate (2015).

CREATE ECONOMIC INCENTIVES THROUGH TRAININGS AND DIRECT PAYMENTS

Receiving economic incentives can allow women to participate in training, integrate what they have learned into their farming, and especially allocate sufficient time and labor to their tasks, which in return influences both the quality and quantity of outputs. Often, because of a lack of control over income, there is a gap between the work that women do on the farm and the benefits received from it. To address this, companies can establish direct payment systems and support women in opening bank accounts, and, if technologically possible, facilitate electronic payments, giving women more decision-making power over their income.[89]

BOX 8:

INDEX-INSURANCE

This insurance type "pays out benefits on the basis of a predetermined index for loss of assets and investments, primarily working capital, resulting from weather and catastrophic events, without requiring the services of insurance claims assessors. A statistical index is developed before the start of the insurance period to measure deviations from normal for such parameters as rainfall, temperature, seismic activity, wind speed, crop yield or livestock mortality rates. The Global Index Insurance Facility (GIIF), managed by the World Bank Group, has been leading and supporting index-insurance programs since 2009."

Source: "Index-Insurance: Protecting Women Farmers Against Weather Risk" by World Bank (2015).

SOURCE FROM COOPERATIVES AND FARMER ORGANIZATIONS WITH EQUITABLE LEADERSHIP

Participation in cooperatives enables its members to access farming inputs and equipment, as well as markets to sell their products. Owing to women's greater limitations in access to land titling and other assets, which can be requirements for cooperative membership, women can face challenges in becoming part of such organizations.

Companies can take advantage of the fact that enterprises with women in leadership positions outperform those without female leaders. For instance, a research piece from the nonprofit organization ACDI/VOCA on women farmers in Paraguay found that the same is valid for farmer organizations; that participation of both men and women in membership and leadership strengthens the cooperative due to the diversity of perspectives.[90] **Some companies such as IFC client Mondelēz International are taking advantage by increasing women's leadership roles in cocoa cooperatives and in the communities from which they source.** Through targeted programs female leadership in cooperatives increased to approximately 30 percent, which has enabled Mondelēz to establish stronger relationships with women in the cocoa-farming communities in which they operate.[91]

LEVERAGE WOMEN FARMERS AS BUSINESS OPPORTUNITY FOR INSURANCE COMPANIES

Agribusiness and disaster insurance is a common practice for farmers in advanced economies, but oftentimes unavailable in emerging markets. The lack of insurance increases small-scale farmers', and particularly women's, vulnerability to unforeseen weather events and results in more risk aversion and fewer investments in farms and production. Providing index-insurance is one way for insurance companies to tap into the niche of agri-insurance.[92] **To make insurance more affordable, the Global Index Insurance Facility (GIIF), makes arrangements to enroll groups of farmers in insurance programs, benefiting both farmers and insurers like Swiss Re and AXA.**

3.5 CASE STUDY:

Mondelēz International's Cocoa Life Program in Indonesia

Ninety percent of the world's cocoa production relies on smallholders with farms measuring less than two hectares. These smallholders need to be poised to meet the anticipated 30 percent growth in cocoa demand by 2020, a demand propelled by increased consumption in emerging markets like China and India. Overall, however, cocoa supply faces challenging trends: rural cocoa farmers are switching to more lucrative crops; young adults migrate to cities; productivity is being hindered by ageing trees and outdated farming; and limited access to key inputs, training, and financing for farmers. Gender gaps also limit the knowledge of women cocoa farmers.

As the global market-share leader in chocolate, and the largest buyer of cocoa worldwide, Mondelēz has an interest in filling this demand-supply gap, which may add up to as much as 1 million metric tons. To help meet long-term targets and improve the sustainability of cocoa-growing communities, Mondelēz established the Cocoa Life program.

Mondelēz's $400 million Cocoa Life program is present in the six major cocoa-growing countries: Brazil, the Dominican Republic, Ghana, India, Indonesia, and Côte d'Ivoire. To increase its cocoa supply, Mondelēz aims to sustain participation in cocoa farming and increase the productivity of cocoa farmers. The former supports a stable supply of farmers, and the latter can lead to increased yields; in combination, they can substantially address the company's cocoa supply. The program also puts an emphasis on closing gender gaps in cocoa production and trade. Under Cocoa Life, the company implemented a series of activities including:

- *Capacity-building for farmers through farmer field schools;*
- *Demonstration farms and training videos;*
- *Specifically educating women about business management and financial services;*
- *Establishing village savings and loans associations to increase women farmers' access to finance;*
- *Promoting women's membership and leadership in cocoa cooperatives; and*
- *Improving women farmers' access to critical inputs.*

Mondelēz measures Cocoa Life's progress through ten key performance indicators, four of which focus directly on women: gender-disaggregated net income from cocoa, gender-disaggregated net income from non-cocoa sources, gender-disaggregated cocoa productivity, and women's participation in decision-making processes.

Mondelēz partnered with IFC and Global Affairs Canada in Indonesia to evaluate gender gaps and opportunities. IFC used its gender mapping expertise to create easy-to-read visuals on the gender division of roles in the cocoa production process. This informed the design of Mondelēz's $13.3 million commitment in Indonesia, allowing it to define specific interventions for women. The program aims to reach 40,000 farmers by 2022.

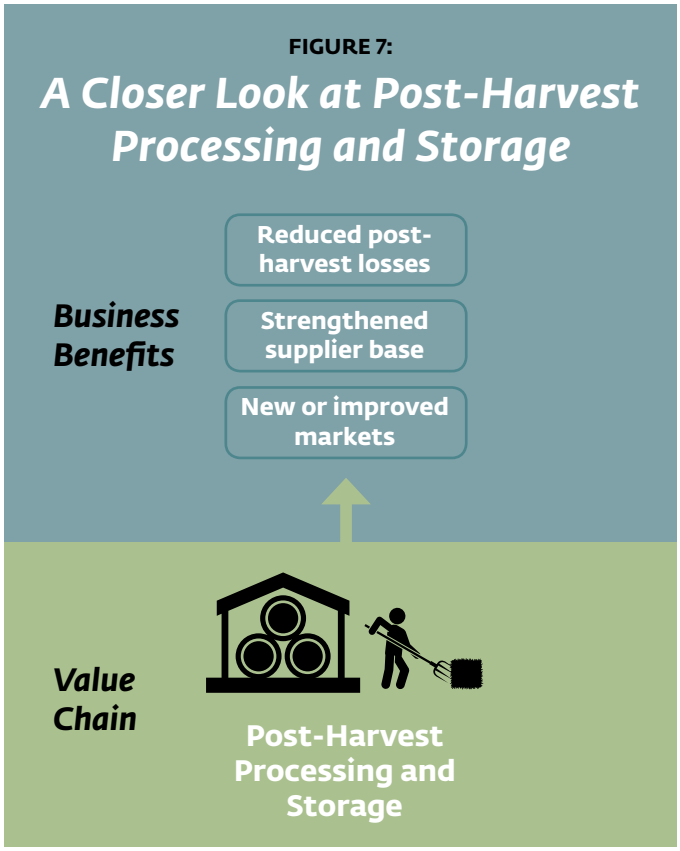
The gender mapping found that women farmers have relatively equal say over finances but less of a role in decision-making and project training, meaning that they had relatively little access to farmer groups and training, as well as comparatively low access to land. Because women play roles in cocoa production such as sorting and drying that were key determinants of the quality of cocoa produced, gender gaps in training reduce the potential of the country's cocoa industry. Further, because women were not much involved in the marketing and pooling side of selling cocoa, they lacked access to a full range of market opportunities, potentially reducing their income. However, the mapping also found substantial regional variation within Indonesia, highlighting the need to define and survey farmer populations carefully.

As a result of this initial mapping, the program has defined specific interventions to address these gaps and ensure access for women to critical elements like training and cocoa marketing activities.

4. Post-Harvest Processing and Storage

4.1 Overview

Investments in gender-smart post-harvest processing and storage are not as common as those in production. Yet, as one study notes, post-harvest operations "are time-consuming, repetitive and arduous, and are principally carried out by women."[93] Furthermore, good-quality storage, while essential to retaining the value of produced goods, is often out of reach for women. Understanding how agribusiness can improve an often-neglected stage of the value chain can open up new opportunities to improve quality and safety, while reducing waste.



While different commodities require different post-harvest processing procedures, for this report, post-harvest activities include initial handling; primary processing, which preserves the product; secondary processing, which transforms the product into another form; and packaging. These activities occur in conjunction with the transportation discussed in the following section.

Before, during, and after processing, storage and protection are crucial to reduce losses, ensure safety, and retain value. As a report for the Food and Agriculture Organization (FAO) notes, "the role of post-harvest protection in the food chain is often underestimated."[94] In almost all value chains, substantial damage occurs following harvesting but before transport to market. This represents a loss for farmers, who have already invested time and funds in production, a limitation on agricultural market growth, and a potential food security risk. All are likely to increase as a result of climate change because of obstacles such as faster reproduction of insect pests, diseases, and increased risk of rot, all of which necessitate improved storage.[95]

4.2 Women's Key Value Chain Activities in Post-Harvest Processing and Storage

While women are generally, though not universally, responsible for key processing activities, specific roles in post-harvest and storage are highly variable across regions and value chains. However, a few cross-cutting lessons emerge. Research has found that women are more likely to participate in processing activity as employees of larger firms, rather than as individual entrepreneurs.[96] Also,

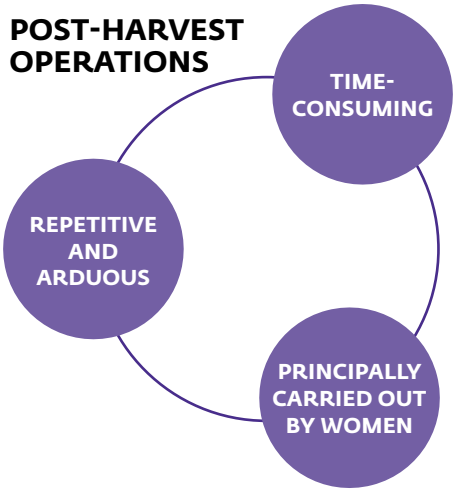
where post-harvesting activities are not mechanized, they are more likely to be carried out by women.

Post-harvest processing is typified by high levels of variation between men and women in different commodities, even within the same region. For instance, "in Bangladesh, women may provide 5 percent of the labor in harvesting and threshing for rice, while in Assam, India, women provide 60 percent. For other post-harvest activities, Bangladeshi women provide 51 percent of the labor, while women in Assam provide 90 percent."[97] A gendered value-chain mapping should pay particular attention to the divisions of labor within each stage.

As a rule, women's activities can be divided into energy-heavy and time-heavy activities, with prominent energy-heavy activities including milling and de-hulling of grains, and walking with loads, and with prominent time-heavy activities, including walking, waiting, and manual milling.[98] In particular, "the major staple crops, maize, paddy, sorghum, millet, and cassava constitute a group of core crops for which production and manual processing is significant," with a high involvement of women in post-harvest activities.[99] Also, as a rule women's access to storage tends to be lower than that of men because of the required access to transport and financing.

4.3 Constraints Women Face in Post-Harvest Processing and Storage

The constraints that women face in processing are similar to those faced in production: lack of access to knowledge and resources due to informal or unacknowledged roles, or low-value employment opportunities. In storage, the main constraints women face are access and affordability.



ACCESS TO QUALITY STORAGE

Lack of access to storage, and the high post-harvest damage and loss of market opportunity associated with it, have been described as a "hidden tax" on farmers.[100] Because women are less able to access quality storage, they experience higher levels of damage to crops. They also face more pressure to sell during harvest season, when prices are comparatively low. Since women are more likely than men to require storage for short-life vegetables, their need for good storage is particularly high.

ACCESS TO KNOWLEDGE OF BEST PRACTICES

Women processors are often not considered as full contributors to production at the same level as men. Globally, only 15 percent of agricultural extension service workers are women, meaning that women are often left out of key knowledge networks.[101] Lack of specialized knowledge for women processors is a particular disadvantage for downstream companies in those commodities where quality, and thus value, is highly dependent on processing. In the West African cocoa sector, for instance, women are responsible for cocoa drying, a key determiner of final cocoa quality,[102] but are not necessarily considered formal workers and typically have limited access to knowledge-sharing.

ACCESS TO FINANCE

Financing, or rather the lack thereof, contributes to the other gaps noted here. Lack of financing impacts the ability of women entrepreneurs to obtain inputs, leverage appropriate technology, maintain operating capital, and access storage. Ultimately, insufficient capital keeps women processors from being able to scale operations. It may also offer

an impediment for women to enter processing at all; for instance, a women producer may sell her goods in raw form rather than at a higher value post-processing.

ACCESS TO TECHNOLOGY

Technology in this instance does not refer only to information and communication technologies, but rather to a broader set of tools to improve the efficiency and outputs of the post-harvest process. Women's low use of technology increases the time and energy associated with post-harvest activities. Men associate low use of technology and low access to advanced tools with low-status work, reinforcing gender segregation in job roles. For women, lack of technology also presents a time burden, keeping them from other income-generating activities.

4.4 Recommendations for Company Actions in Post-Harvest Processing and Storage

A variety of gender-smart solutions can benefit women processors and strengthen supply chains. At the processing level, the business case is strongest when the specific roles that women perform in the process contribute substantially to final quality or total output. The types of companies that are most likely to benefit from the investment include traders that are buying from processors, who will be able to claim a higher margin once goods are sold, and any end-buyers who rely on high quality or are suffering from shortages. A strong business case is also applicable where other actors do not offer adequate processing services or where women are being locked out of processing roles.

> Understanding how agribusiness can improve an often-neglected stage of the value chain can open up new opportunities to improve quality and safety, while reducing waste.

BOX 9:

BUSINESS BENEFITS FOR COMPANIES FROM CLOSING GENDER GAPS IN POST-HARVEST PROCESSING AND STORAGE

- **Reduced post-harvest losses**
- **Strengthened supplier base**
- **New and improved markets**

TRAIN IN BEST PRACTICES

For many commodities, the role of women can be quite significant, even when accounting for a relatively small percentage of the overall labor required. For instance, an IFC study in Papua New Guinea found that "women are directly engaged at critical stages of coffee and cocoa production and processing; in coffee: picking (often strip-picking) cherry, pulping, fermenting, and drying; in cocoa: harvesting, breaking the pods, sorting of beans, transport of wet beans for fermenting, putting wet beans in the fermentary, and managing the drying." In both sectors, these tasks substantially determine the quality of the coffee and cocoa delivered to the exporter.[103] In another case, the **Unilever Hibiscus Supply Chain program enabled women farmers to enhance their processing techniques**, such as drying, and improve their seeds before sowing, **giving their produce better quality and value**.[104]

SUPPORT UPGRADING

Involving women in, or improving the status of women's existing involvement in processing activities can increase farmers' earnings, open employment opportunities, and provide an alternative use of production oversupply.[105] Common approaches include the addition or improvement of packaging; further processing steps, such as chopping, trimming, or mixing; and infrastructure improvements, such as cold storage.[106] For companies downstream, the main argument for supporting the upgrading of activities is to improve the quality or consistency of the products supplied. As with training, the business case is strongest when the company making the investments has a direct relationship with the processors.

FACILITATE ACCESS TO TECHNOLOGY

Many of the processing roles that women manage are intensely time-consuming. Access to basic processing tools can reduce this burden and help women produce more while improving quality and reducing losses. For instance, in Tanzania a new machine helped a peanut-shelling group reduce the shelling time of 20 kilograms of peanuts from a whole day to five minutes and a rice thresher to a village in Uganda eliminated the 5 percent spillage loss that had occurred previously.[107] It should be noted that in transferring technology it is particularly important to ensure that women will be able to maintain access to the technology rather than simply shifting roles, now easier and more profitable, to men. For instance, an initiative to introduce the mechanized rice transplanter to villages in rural Bihar, India, was successful in part because out-migration of men had left women as the dominant labor force.[108]

FACILITATE ACCESS TO FINANCE

Financing is particularly relevant in processing and storage, as both can require investments in technology. High levels of interdependency within agricultural value chains mean "weakness at any link in the chain can increase financing risk at all levels."[109] As a result, women's inability to access financing and to scale their endeavors has an impact on downstream actors through increased fragmentation and low quality. While financial actors such as banks or micro-financing institutions certainly play a leading role, individual non-financial actors can also facilitate access for women.[110] Providing forward financing with

future production or processing as collateral allows women to leverage their assets and to increase their liquidity. The case of AFEX (see section 4.5.) also outlines a way of agricultural value chain financing in practice. For companies that source from women processors, facilitating financing for processors can be an effective supplement to other forms of investment as it allows them to provide women with access to knowledge, technology, and storage without making a direct investment.

EMPLOY WOMEN

While this report focuses largely on women as smallholders and as independent entrepreneurs, companies already involved in processing can also apply gender-smart employment solutions. Women are increasingly working in wage-paid agro-processing roles. "Women appear to be migrating out of unpaid family labor into wage labor or entrepreneurial roles. With upgrading into packing and processing occurring in more developing countries, the presence of commercial pack houses in rural and urban areas is attracting young, unmarried females as waged laborers."[111] This benefits women through more consistent, often better-paid labor; however, this is only the case if decent labor standards are maintained. In companies with direct employees, investing in gender-smart solutions can provide returns including, among other benefits, increased access to labor and talent; decreased recruitment and (re)training costs through reduced labor turnover; and improved innovation through a more diverse workforce and management teams.

> Lack of specialized knowledge for women processors is a particular disadvantage for downstream companies in those commodities where quality, and thus value, is highly dependent on processing.

4.5 CASE STUDY:

Africa Exchange Holdings Builds a Market for Agricultural Warehousing and Exchange

Africa Exchange Holdings (AFEX) is a regional commodity exchange. In Nigeria, AFEX manages a warehouse facility and exchange where farmers can store their harvest without loss of value while capitalizing on maximum commodity prices. Implemented with the national Ministry of Agribusiness, the system aims to reach 300,000 metric tons of storage capacity annually. However, building a warehousing network requires a consistent supply from farmers; in other words, a strong customer base. In Nigeria, this is a challenge because markets are fragmented and much of the agricultural production remains informal and small-scale. Women farmers in particular are likely to lack the knowledge, financing, and access to warehouses and exchanges. Another challenge is the limited freedom of movement for women in northern Nigeria.

In the Propcom Mai-Karfi program, AFEX partnered with development consultancy Palladium to drive national market demand for warehousing by enabling access to storage for the country's small-scale farmers, including women-led farmer cooperatives in maize and soy. To do this, the partners used two different tactics. First, the partnership supported cooperatives in organizing, formalizing, and scaling commercial transactions with AFEX, in order to demonstrate their proven ability to serve local communities. The intervention enabled farmers to have access to an alternative market that not only gave them better prices but also saved costs associated with small, repeated transactions. Second, AFEX pre-financed the immediate payment of the cooperatives' purchase from farmers.

As of 2016, 45,000 farmers have been added to AFEX's warehousing and exchange system through a thorough registration process, with an intended scale-up to 150,000 farmers by 2018. While AFEX recruited male farmers with relative ease, recruiting women required a dedicated outreach effort. Through cooperatives, AFEX invested a large amount of resources in sensitizing women farmers to the services and benefits of the program.

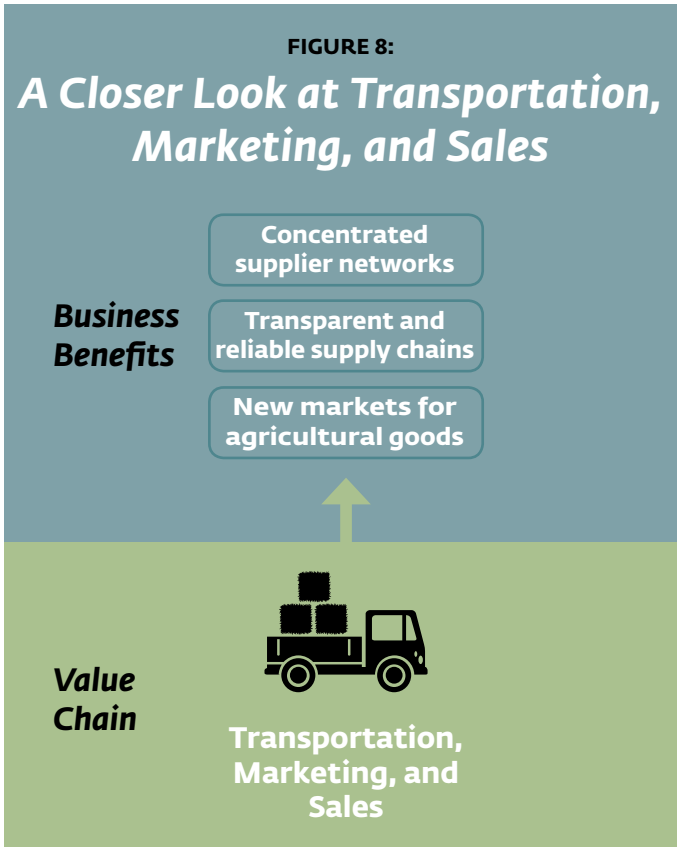
Farmers who have accessed AFEX services through their cooperatives have an average positive profit margin of 2 percent, up from a prior average operating loss. The women in particular benefited through increased access to commodity markets that distance and social mores would have otherwise made unreachable. AFEX itself also benefited due to access to large volumes of commodities for sale at their warehouses. Engaging with the cooperatives reduced the costs of targeting individual farmers and ensured access to remote farming communities. By the project's completion, Propcom farmers will use 40 percent of AFEX's storage capacity.

Propcom Mai-Karfi is run by Palladium and funded by the UK Department for International Development, in partnership with and contributions from AFEX. More information about the Propcom Mai-Karfi program can be accessed at **http://www.propcommaikarfi.org/**.

5. Transportation, Marketing, and Sales

5.1 Overview

In input provision, production, post-harvest processing, and storage, women play crucial but often unacknowledged roles, meaning that gender-smart solutions generally involve formalizing their roles and facilitating access to improved tools and knowledge. In transportation and sales, women tend to be excluded or confined to low-value, local markets.[112] Women are underrepresented in engagements with informal or formal markets in cooperatives, with traders, or in other market-facing roles. This means the business case for gender-smart solutions rests on helping women enter sectors within agribusinesses that were previously closed to them. It also rests on targeting the women's consumer market and building a strong marketing narrative around working with women in agribusiness.



5.2 Women's Key Value Chain Activities in Transportation, Marketing, and Sales

Women in agribusiness are likely to be excluded from transportation of goods to market or from marketing or sales roles of goods, even when women are the main producers of those goods. Where women are involved, their sales opportunities are more likely to be confined to local markets rather than regional or international ones. This results in poor access to networks and is reinforced by infrastructure and trade systems that tend to inadvertently disadvantage women.

In contrast, women's role as consumers in comparison to that of men is quite prominent. Women make the majority of customer decisions globally and are even more likely to be key purchasers of family necessities such as food. Unilever, for instance, states "Women comprise over 70 percent of our consumers,"[113] and Nestle has noted that "women represent 80 percent of our consumer spending decisions."[114]

5.3 Constraints Women Face in Transportation, Marketing, and Sales

Women are widely excluded from transportation and marketing in agribusiness, driven by limited freedom of movement, low access to infrastructure, low access to information and networks; and restrictive regulatory frameworks. These constraints keep women from participating in or benefiting from what are often the

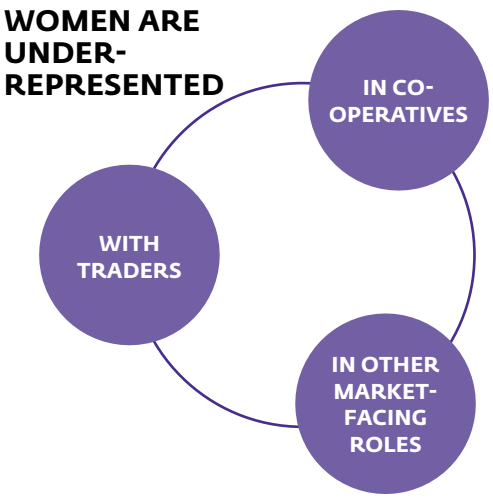
most profitable parts of the value chain. This is particularly the case when cultural norms restrict women's freedom of movement or where there is limited or high-risk transportation.

FREEDOM OF MOVEMENT

Possibly the most challenging social barriers for women in transportation, marketing, and sales are restrictions on freedom of movement that limit women to local, low-value markets. These restrictions can be explicit but are more often a result of de facto divisions of labor between men and women that confine women to home-based activities. For instance, family care responsibilities restrict women's access to markets by keeping their obligations focused on the house or immediate community. This has a direct impact on women's profits. A World Bank study of farmers and traders of the eru vegetable in Cameroon found that "profits along the value chain increase the further away they are from the growing area (forest), with exporters enjoying the highest profit margins," but that only men were able to access more distant markets.[115]

ACCESS TO INFRASTRUCTURE

"Not having access to transport services means that women are largely excluded from key downstream activities along the supply chain," the World Bank research has noted.[116] Gaps in infrastructure unintentionally limit use for women. For instance, buses that run only during peak hours conflict with women's household responsibilities or transportation that exposes women to a high likelihood of harassment reduce user rates.[117] Since women tend to trade in perishable goods, this circumscribed movement affects them disproportionately. In one instance, a study of the Brazilian grape sector noted that small-scale farmers find it harder to negotiate for access to the required "elaborate cold chain from packing shed to final destination," and ended up paying higher costs or missing out on sales opportunities.[118]



ACCESS TO INFORMATION AND NETWORKS

Women often lack access to informal business networks that facilitate sales opportunities. Without access to high-value sales, they sell their goods to local middlemen without exploring wider market opportunities. More broadly, low access to information resulting from, for instance, low use of technology means women may not be able to act on the latest market information. Harassment in public spaces can also undermine women's ability to access local information sources. Improving safety features, such as lighting or women's toilets, can improve women's ability to participate in markets.

EFFECTIVE LEADERSHIP

Women face two challenges in obtaining leadership roles in key sales groups, including cooperatives, businesses associations, or commodity boards. The first challenge is obtaining leadership roles and the second is acting in more than a nominal capacity rather than as stand-ins for male family members. In either case, the group can fail to address the challenges that women face in a given sector when women as a group are not able to effectively voice concerns or propose solutions. For instance, Nestlé noted, "Women do more than two-thirds of the work involved in coffee farming in Kenya. However, fewer than 5 percent of leadership roles in coffee cooperatives in the country are currently held by women. We are encouraging them to move into leadership roles, so they can be adequately represented in decision-making."[119]

BURDENSOME REGULATORY FRAMEWORKS

Complex or burdensome regulations disproportionately affect women, largely because of the low access to information and increased risk of being subject to payments for "expedition." These extra costs apply to processes to formalize businesses, pay taxes, and in particular, to trade across international borders, which often require specific permits or elaborate customs forms.[120] Complex requirements on health and safety certification, often crucial to enter global markets, can also leave women behind.

5.4 Recommendations for Company Actions in Transportation, Marketing, and Sales

Gender-smart solutions in transportation, marketing, and sales include buying from and paying women directly; drawing on ICT to overcome transportation challenges; building on women's strengths in indigenous, local, and organic crops; marketing investments in gender-smart solutions; and supporting investment climate reforms. The business case for investments at the transportation and marketing stages rely largely on long-term market-building opportunities. While most solutions can be adopted by individual companies, supporting investment

> The business case for gender-smart solutions in transportation, marketing, and sales rests on helping women enter new roles and targeting the market for ethically sourced goods.

climate reforms is a long-term commitment that can benefit companies at any stage of the value chain but is best undertaken through multi-stakeholder platforms.

BUY FROM AND PAY WOMEN DIRECTLY

Creating direct linkages with women in the supply chain is the best way to ensure that women benefit from their work, maintain control over their assets, and can expand their businesses. For instance, **the Café Femenino brand buys coffee exclusively from women, charging a premium that is passed on to farmers**. Also, whereas male farmers usually collect payment on behalf of women, women are required to collect payment directly.[121] Creating direct market linkages also ensures that companies can capture the marketing premium for gender-smart solutions (see 5.5 Primark case study). Buying directly from women is a particularly useful strategy where there are existing networks of cooperatives or business organizations that already include women. This allows sourcing companies to partner with a large number of women without having to establish individual linkages and to develop concentrated supplier networks, ultimately reducing costs and enhancing corporate responsibility.

USE ICT TO OVERCOME TRANSPORTATION AND TRANSPARENCY CHALLENGES

While technology adds value to every stage of the value chain, ICT applications have particular utility in access to transportation, marketing, and sales, because they can help overcome the restrictions on movement and home-based care responsibilities that are oftentimes barriers for women. Because of the obvious benefits of ICT solutions, examples show that women seize on technology agribusiness applications even in the face of difficulty in accessing basic products and services. In Uganda, for example, "female farmers were more likely to use mobile phones to access agricultural information than men, even though they used the phones less overall."

BOX 10:

BUSINESS BENEFITS FOR COMPANIES FROM CLOSING GENDER GAPS IN TRANSPORTATION, MARKETING, AND SALES

- **Concentrated supplier networks**
- **Transparent and reliable supply chains**
- **New markets for agricultural goods**

Mobile phones enabled women to circumvent middlemen and obtain higher prices.[122] For agribusinesses, expanding ICT applications brings a larger and more diverse group of commodity producers and suppliers to companies downstream.

Potential applications are varied and numerous. For instance, sales through farmers' organizations are more easily aggregated, reducing fragmentation for downstream buyers, which is a key barrier in sourcing from small-scale and marginalized farmers. In Zambia, the "National Farmers Union's SMS-based service allows farmers to coordinate their delivery times and organize a single location for traders to pick up goods in bulk."[123] In India, the Rural Distribution Network (RUDI), a network of women agricultural processors, uses a mobile management information system (MIS) to reach over 1 million households annually.[124] In Kenya, **Kenya Nut, a nut-processing company, uses mobile alerts to inform its farmers of the current market price of their produce**, to avoid having the produce sold under market price to customers.[125] For sourcing companies, these investments not only improve access to goods but also make supply chains more transparent and reliable.

As the World Bank's *Digital Dividends* notes, "Basic price and market information systems can improve efficiency and welfare," but "even when farmers are seemingly better informed, they may not necessarily be able to act on that

information because of the inaccessibility of alternative markets and the complex interlinked relationships between buyers and sellers."[126] Therefore, ICT solutions should be applied in conjunction with the other solutions mentioned in this report.

BUILD ON WOMEN'S STRENGTHS IN HIGH-VALUE, INDIGENOUS, AND ORGANIC CROPS

While women face many constraints in transportation, marketing, and sales, they also have several advantages. Capitalizing on these can help open networks and opportunities that would otherwise be closed. World Bank research notes three possibilities to do so: through high-value, indigenous, and organic crops. In the former, "high-value crops require labor-intensive production techniques, such as pruning and trellising, which cannot be mechanized and in which women often specialize."[127] Investing in women working in these commodities can value their work while increasing quality and quantity of available crops. Second, many indigenous, non-cash crops tend to be the exclusive purview of women. Commercializing these crops can benefit women while building new markets, such as in Rwanda, where **Ikirezi Natural Products worked to develop a market for natural geranium oils, working with women's co-operatives to create the products**.[128] Finally, because women typically use lower levels of pesticide than men, women may find it comparatively easier to obtain organic certification.[129] Working with women organic farmers offers particular potential for commodities such as cotton, for which global demand outstrips supply, opening up what are currently niche markets.

ENABLE MARKET INVESTMENTS IN GENDER-SMART SOLUTIONS

The business case for gender-smart solutions largely relies on maximizing the potential quality and productivity of agribusiness value chains. However, the same investments can be leveraged to draw on the increasing demand for ethically sourced and women-friendly products. The market for ethically sourced products is global, with 40 percent of American and European consumers willing to pay more for ethical products, and over 60 percent of consumers in Asia-Pacific, Latin America, and the Middle East and North Africa saying the same.[130]

Women also make 60 percent to 80 percent of consumer decisions.[131] Of the growing number of companies that have recognized this, relatively few have been in agribusiness. There is strong growth potential for companies that are successfully able to build on consumer interest in gender-smart solutions. For instance, **Twin Trading has invested in a "women's coffee" product that has come to be recognized for its superior quality**, and that therefore commands a price above the fair-trade premium.[132]

SUPPORT INVESTMENT CLIMATE REFORMS

Business can make a real difference in helping women overcome entrenched challenges in the operating environment. By advocating for gender-smart solutions with relevant policy makers, coalitions and multi-stakeholder initiatives are particularly suited to addressing challenges that impact the women of an entire region or sector, such as burdensome customs procedures.[133] In Uganda, for instance, IFC worked with a coalition of businesses on a Gender and Growth Assessment. The resulting analysis informed the Private Sector Development Strategy, National Gender Strategy, and several labor regulations that supported growth for the country as a whole.[134]

5.5 CASE STUDY:

Primark, CottonConnect, and the Self-Employed Women's Association Build a Sustainable Cotton Supply Chain with Female Farmers in India

For brands and retailers, one of the biggest challenges is the length and complexity of global supply chains. In cotton, for instance, farmers sell to local traders, ginners, and spinners, who in turn then sell fabric to garment manufacturers. Most brands and retailers buy from manufacturers, and are therefore rarely directly connected to cotton farmers. By working directly with women cotton farmers, European fashion retailer Primark increased the company's social and environmental sustainability.

Primark has the long-term ambition of ensuring that all the cotton in its supply chain is sustainably and responsibly sourced. The company realized that working with women could help achieve both goals. This is why in 2013, Primark used its relationships to bring together agricultural experts CottonConnect and the Self-Employed Women's Association (SEWA) to create Primark's Sustainable Cotton Program. This program was initially created to train 1,251 female smallholder farmers in Gujarat, India, through classroom sessions, in-field training, and learning groups.

Primark chose to work with only female smallholders because women farmers play important but often unacknowledged roles in cotton production. Alison Ward, CEO of CottonConnect, notes that "engaging with women farmers is critical to creating thriving cotton communities.... Women do their share of the hard work, but often receive a much smaller portion of income." The program gave this often neglected group access to formal training, with the aim of improving their livelihoods, empowering them, and helping to narrow the gender inequality gap in their community, while benefitting the environment and the wider community through the adoption of more sustainable farming methods.

The program's benefits were delivered in the form of increased yields, more efficient water usage, a more than 10 percent reduction in the amount of fertilizer used, and a greater than 50 percent reduction in the amount of pesticide used, and a dramatic increase in the average amount of profit—over 200 percent. Results show the farmers were successfully trained to produce more sustainable cotton, reduce the environmental impact of their work, and improve their livelihoods through increased income.

YEAR 1 AND YEAR 2 RESULTS FROM PRIMARK'S SUSTAINABLE COTTON PROGRAM

	Year 1	Year 2
Yield	+11.5%	+12.6%
Fertilizer Usage	–19.5%	–13.5%
Pesticide Usage	–52.2%	–53.5%
Average Profit	+176%	+211%

The first three years of the program were so successful that Primark has decided to extend the program for another six years to reach an additional 10,000 female farmers and their families, and provide further business development skills-training for the 1,251 already trained.

Primark is working towards incorporating this sustainably sourced cotton into its supply chain. The program also provided Primark with a valuable insight into the cotton supply chain and the lives of the smallholder cotton farmers.

Primark's Chief Executive Paul Marchant said: "As a growing business with an international supply chain, at Primark, we work hard to ensure that our products are made with respect for workers' rights and the environment. This program goes right to the heart of our supply chain and illustrates our desire to make a genuine difference to the lives of people working within developing markets."

For more information on the program please visit: **http://www.primark.com/en/our-ethics/news/press-releases/primark-partnership-cottonconnect-sewa-india**

Conclusions

While each of the four sections in this report highlights specific gender gaps and potential areas for private sector investment, a number of cross-cutting insights can inform companies on when and how best to implement gender-smart investments.

1. Identify the most relevant interventions and opportunities through gender value chain mapping: Business opportunities from closing gender gaps are most likely to occur when the company is directly affected by shortages in a given commodity or product; where women play a crucial role in product output or quality; or where there is substantial untapped market opportunity. The business case is further strengthened where companies making the investments have direct commercial relationships that guarantee they will receive the improved commodity, such as in contract farming. These opportunities are best identified after completing a detailed gender value chain mapping.

2. Engage non-farm actors: Non-farm actors often have a strong business rationale for investing in women and can be key players in strengthening a value chain as a whole. The featured case studies of Krishi Utsho and AFEX (Sections 2.5 and 4.5), focusing on agricultural inputs in Bangladesh and on warehousing in Nigeria, respectively, offer two examples of how businesses that serve women farmers can leverage gender-smart solutions by recognizing women as consumers whose demands often go unmet or underserved.

3. Consider hidden solutions: Initiatives that can have business impact may at first glance not look like initiatives that would support women's access to value chain opportunities. This is particularly the case for initiatives that make markets more transparent and accessible, such as ICT-enabled commodity-aggregation platforms or streamlining customs and border processes, both of which are gender-neutral at face value but can help women access opportunities or participate fully.

4. Support an enabling environment: Although a single company can effectively undertake some gender-smart solutions, many require joint action. The latter is particularly true when it comes to challenges best addressed on a pre-competitive or sector-wide basis. For instance, investment climate reforms that address women's access to finance or access to transportation—or which seek to reduce customs requirements—are best addressed through consortia and through partnership with the public sector.

5. Consider long-term investments: Two types of investments will pay long-term dividends: increasing sustainability and building new markets. Mondelēz has invested in increased sustainability by recognizing gender equality on cocoa farms as a prerequisite to meeting growing global demand for cocoa and has committed to a decade of investments through its Cocoa Life program.[135] AFEX showed how building new markets can be accomplished by working with women-owned or women-run cooperatives, which could catalyze wider demand for warehousing in Nigeria.

Annex A: Summary of Gender-Smart Solutions in Agribusiness

	Input Provision and Use	Production	Post-Harvest Processing and Storage	Transportation, Marketing, and Sales
Women's roles	Roles include • Agro-dealers • Agro-agents • Small-scale farmers	Activities in agricultural production vary greatly across commodities and regions Women are over-represented in informal, unpaid, part-time, seasonal work	Women's roles are highly varied but they often play crucial roles in processing, determining quality of final output	Women are often limited to local transport and excluded from regional markets and sales networks but play prominent roles as consumers
Constraints faced by women	Access to inputs and their correct usage Access to technology and machinery Access to information, training, and knowledge	Access to training, extension services, and technical information Access to finance and mobile bank accounts Access to land ownership Access to cooperative leadership and participation Limitations on time and mobility Access to ICT and mobile technology Access to labor-saving technologies	Access to quality storage Access to knowledge of best practices Access to finance Access to technology	Freedom of movement Access to infrastructure Access to information and networks Effective leadership Burdensome regulatory frameworks
Gender-smart solutions	Support women in opening agro-dealerships and provide training on the use of inputs Develop targeted ICT outreach and products for consumer loyalty Enable use of mobile banking applications and pre-paid vouchers Increase consumer reach through women agro-agents Adjust training content and timing Increase sales by tailoring products and packaging to women farmer needs Increase access to agricultural technologies and machinery	Assess "who does what" among men and women in the value chain Increase supply chain sustainability through training adapted to women's schedules and mobility Seek targeted ways to increase women's access to finance Cooperate and leverage expertise of partner organizations Create economic incentives through trainings and direct payments Source from cooperatives and farmer organizations with equitable leadership Leverage women farmers as business opportunity for insurance companies	Train in best practices Support upgrading Facilitate access to technology Facilitate access to finance Employ women	Buy from and pay women directly Use ICT to overcome transportation and transparency challenges Build on women's strengths in high-value, indigenous, and organic crops Enable market investments in gender-smart solutions Support gender-informed investment climate reforms

	Input Provision and Use	Production	Post-Harvest Processing and Storage	Transportation, Marketing, and Sales
Business benefits	Improved availability of products Connection of farmers with output markets through agro-dealers Increased consumer loyalty Increased and secured sales Improved access to women as a new consumer base	Increased supply chain sustainability Maximized impact and profitability through targeted interventions Improved quality of produce and outputs Increased crop yield and quality through trainings Cost saving through partnerships and exchange of expertise	Reduced post-harvest losses Improved quality of production Strengthened supplier base New or improved markets	Concentrated supplier networks Transparent and reliable supply chains New or strengthened markets for agricultural goods
Case studies	Krishi Utsho, Bangladesh	Mondelēz International, Indonesia	Africa Exchange Holdings & Palladium, Nigeria	Primark, CottonConnect & SEWA, India

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