WORLD ECONOMIC FORUM

Agritech for Women Farmers: A Business Case for Inclusive Growth

INSIGHT REPORT

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Images: Midjourney, Getty Images

Contents

Foreword

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Women farmers play a vital role in global food security. The Food and Agriculture Organization of the United Nations (FAO) estimates that women comprise nearly 43% of the global agricultural labour force and produce 60-80% of food in developing countries. With the increasing migration (seasonal or yearlong) of men from rural to urban areas, women bear a greater responsibility in agricultural operations.

Despite this, women farmers' contributions are often overlooked. Structural barriers such as limited access to land, credit, education and technology restrict their productivity and potential for growth. In addition, social and cultural norms may further aggravate this gender inequality in agriculture.

Globally, the agricultural sector stands at a crossroads, facing the intersecting challenges of food security, climate change and socioeconomic inequality. However, existing agricultural technology (agritech) solutions have failed to address the unique needs and challenges women farmers face.

At this critical juncture, adopting digital technologies can transform agriculture, especially when technology providers address women's unique needs. Gender-inclusive solutions can unlock significant benefits across agricultural value chains, enhancing productivity and food security.

Gender inclusivity in agritech has conventionally been viewed through a social lens. Thankfully, in recent years, the private sector has recognized that prioritizing women farmers is both economically and strategically advantageous.

In India, women's political empowerment provides a conducive environment for adopting women-led agritech solutions. Legislation has mandated one-third of all elected representatives in local self-government bodies to be women, enabling many women to become community leaders. Women's self-help groups have also driven women-led micro-enterprises. This phenomenon, which can also be seen in other developing countries, has created fertile soil for women farmers to engage in agritech and become AI-assisted farmers and entrepreneurs.

By prioritizing gender inclusivity in their offerings, organizations can tap into more business opportunities and distinguish themselves in competitive markets. This enhances their brand reputation and contributes to the broader goals of social equity and sustainable development.

This report emphasizes how adopting a "5Ps" approach can drive the success of gender-inclusive agritech initiatives:

- **Product:** Design user-friendly agritech tailored to women's needs.
- **Price:** Make agritech affordable and accessible to women farmers.
- **Promotion:** Use key channels to reach rural and underserved areas.
- **Place:** Target marketing to raise awareness among women.
- **People:** Invest in training and support for women to adopt agritech.

This report highlights the business potential, social impact and resultant economic development of gender-inclusive agritech. It encourages governments, private sectors, innovators, farmer organizations and civil societies to collaborate to demonstrate impactful gender-inclusive agritech models that can be replicated worldwide. In turn, this will unlock new market opportunities, promote social equity and drive sustainable agricultural economic development.

Executive summary

Gender-inclusive agritech boosts productivity, empowers women and offers companies a strong business case for market expansion.

Women farmers are critical to global agriculture. The Food and Agriculture Organization of the United Nations (FAO) estimates that women contribute close to 43% of the global agricultural labour force.[1] They also produce between 60% and 80% of food in developing countries, highlighting their importance for food security in the long term.[2] Despite this, women encounter many challenges limiting their full participation and potential in agriculture. Women farmers often bear the dual burdens of household responsibilities and farm work, which limits their time and productivity. Additionally, social norms restrict their access to and control over resources, constraining their capacity to fully contribute to and benefit from agricultural advancements, including recent innovations in digital agricultural technologies (agritech).

Agritech can potentially transform agricultural systems by creating farm-level and macro gains. However, most agritech solutions do not consider the unique needs and challenges women farmers face. This systematically excludes women farmers as key customers while also limiting their contribution at the farm level. On the contrary, when technology service providers are gender inclusive – i.e. they account for women's unique needs and challenges – the resulting solutions can unlock significant benefits across agricultural value chains.

While gender inclusivity in agritech has conventionally been viewed from a social lens, in recent years, the private sector has recognized the potential business case of intentionally serving women farmers. Some first movers highlight that investing in gender inclusivity enhances an agritech company's brand reputation and customer loyalty, which makes customer acquisition easier. Additionally, by prioritizing gender inclusivity, agritech companies can distinguish themselves in a competitive market and appeal to a broader customer base while contributing to sustainable development goals.

Against this backdrop, this report presents a global overview of gender-inclusive agritech. It highlights the core challenges faced by women farmers in accessing technologies and challenges faced by technology solution providers while serving women farmers.

The report provides recommendations to address some systemic barriers women face and encourages agritech companies to innovate on the "5Ps" – product, price, promotion, place and people – to better serve women farmers. While companies can progress with individual efforts, the road to gender inclusivity and equality at scale cannot be achieved in isolation. The report, therefore, addresses the role of multistakeholder collaboration to drive investments into gender-inclusive agritech to create an enabling ecosystem where women farmers can indiscriminately benefit from recent advancements in the sector.

Introduction

Gender-inclusive agritech can unlock opportunities to strengthen women's critical role in global agriculture and food security.

Women play a significant and pivotal role in the global agriculture sector. According to the Food and Agriculture Organization of the United Nations (FAO), women represent 43% of the global agriculture labour force.[3] This high participation is witnessed across regions: more than two-thirds of employed women in South Asia are engaged in agriculture, while over half of the farmers in eastern Africa are women.[4] Women also produce between 60% and 80% of food in developing countries, signifying their importance for food security.[5]

BOX 1 **Key facts on the role of women in agriculture across emerging economies**

- In Ethiopia, agriculture is primarily a family run enterprise with women contributing to 75% of farm work and 70% of family food production. Despite their crucial role in farming activities, women produce nearly 35% less than men due to limited access to extension services and inputs (seeds and fertilizers).[6]
- In Uganda, women contribute to 90% of the nation's food yet are vulnerable to agricultural shocks from disasters due to their reliance on subsistence farming practices. They also depend on less rewarding farming practices to produce low-value crops.[7]
- In India, women's participation is notably higher, nearly 50% across commercial value chains such as cotton, sugarcane, tea, coffee and cashews. Women are often engaged in the field and primarily responsible for harvesting activities. Despite their substantial participation, women earn up to 60% less than men and face limited access to finance, training and technology. The demanding nature of their work and extended hours also disproportionately impact their health.[8]

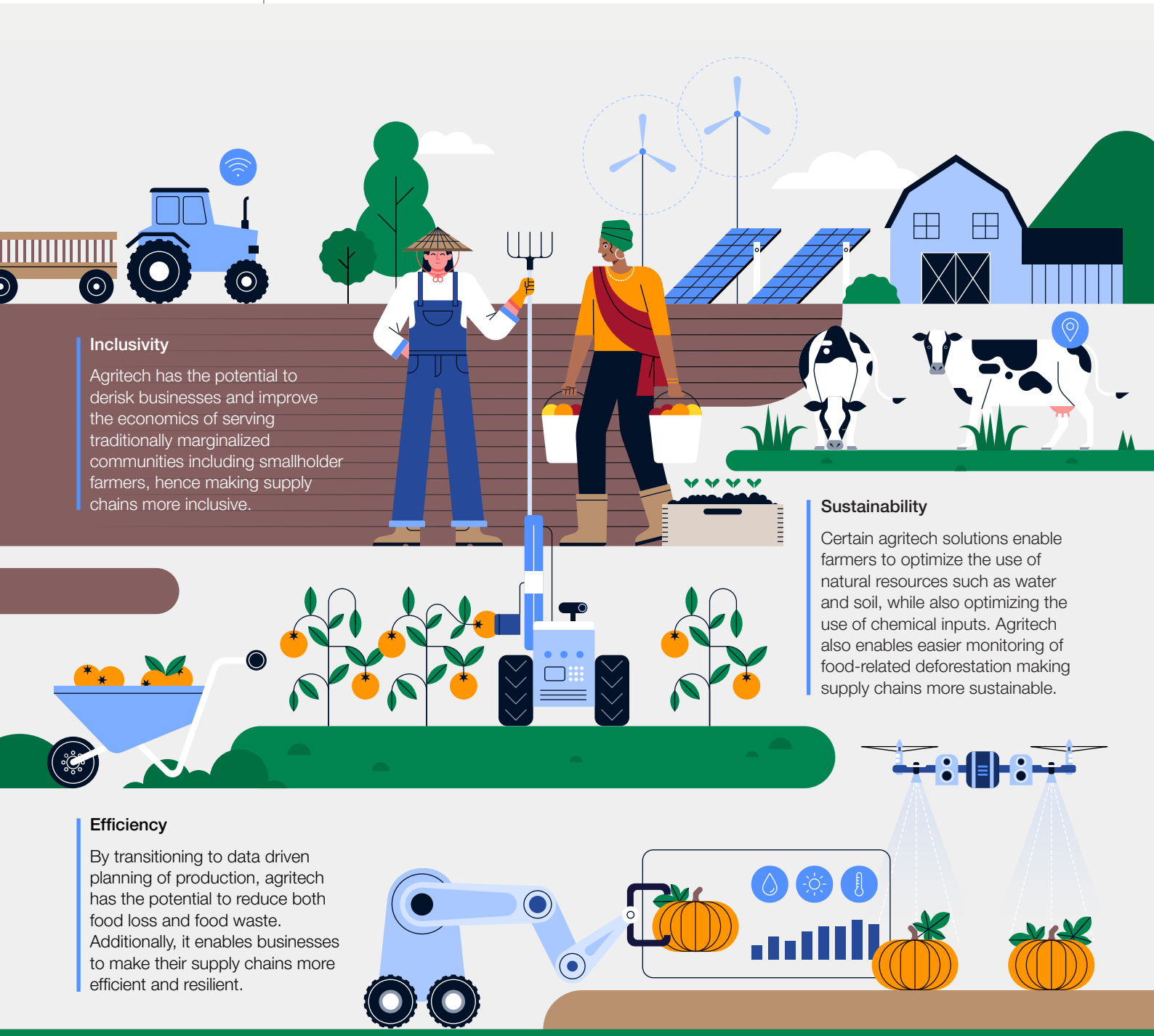
Despite their substantial contribution to global food security, women often face harsh working conditions that adversely affect their health and have limited decision-making power throughout the value chain.[9] Women are mostly involved in highly labour-intensive agricultural tasks ranging from sowing to winnowing to harvesting.[10] For instance, women farmers in India spend about 32% of their time on agricultural activities, mainly involved in transplanting, weeding and harvesting while also managing their household.[11] Similarly, there is a wide gap when it comes to women's access to agricultural resources, inputs, training, access to market, equal pay, livestock ownership and formal credit[12] preventing the agriculture sector from reaching its full potential.

Agricultural technologies and gender: exploring interlinkages

Among the many resources required for securing high-quality agricultural livelihoods, globally, women farmers have restricted access to digital agricultural technologies (agritech), which limits agricultural systems from reaching their full potential.

Over the last decade, agritech has emerged as a transformative force for building more efficient agricultural supply chains while creating socioeconomic impact at the farm level. The use of ICT-enabled technologies such as artificial intelligence (AI), blockchain and the internet of things (IoT) enables farmers to make data-driven decisions by collecting real-time information about soil conditions, pest detection, crop health, weather patterns and other factors that impact agriculture. These technologies also bridge information gaps, facilitate improved access to market data, enhance micro-finance opportunities and facilitate the development of agricultural human capital. This can cumulatively contribute to more inclusive, sustainable and efficient agricultural supply chains and food production (Figure 1).

FIGURE 1 | **How agritech impacts agricultural systems**



Source: World Economic Forum

At a farm level, these technologies can improve yields, optimize the cost of cultivation, reduce food loss, improve unit-sales realization, build climate resilience and help farmers increase their income. For instance, the World Economic Forum-supported programme, Saagu Baagu, implemented by the Government of Telangana, India, demonstrated that when chilli farmers were supported with digital technologies, they reported a 21% increase in chilli yields per acre, a 9% reduction in pesticide use, a 5% decrease in fertilizer use and an 8% improvement in unit prices. This led to $800 income enhancement per acre per cycle.[13] Further, at a macro level, research demonstrates that if the foundation for digital agricultural technologies is well laid, it could increase the agricultural gross domestic product (GDP) of low-and-middle-income countries (LMICs) by $500 billion or close to 28%.[14]

While agritech has taken centre stage focus across global agricultural systems, participation of women in this ecosystem is still restricted, and women farmers often have low adoption rates of agritech. For instance, while women represent close to 50% of smallholder farmers in Sub-Saharan Africa, they make up only 25% of agritech users.[15] Interviews with sector experts highlight that, traditionally, women have not been seen as primary customers of agritech, and most efforts to make technology accessible to them have focused on charity or social impact.

Agritech can help improve access for women farmers. However, treating gender-inclusive tech solely as a social issue rather than a business priority risks undermining long-term agricultural productivity, household income and missing out on a valuable customer segment for businesses. A notable example of how access to resources improves well-being is financial inclusion in India. With a push on financial inclusion under the Government of India's Jan Dhan Scheme, it is estimated that the lifetime revenue of female bank account holders is 12% more than that of male customers. It is estimated that public sector banks could attract approximately $2.9 billion in deposits by serving 100 million low-income women across the country.[16]

By shifting to gender-inclusive agricultural technologies, sector stakeholders can empower women, contribute to holistic rural development and ensure long-term food security. Furthermore, by studying the unique challenges faced by women in agriculture and developing technology solutions that circumvent or address them, businesses can unlock a vast and largely untapped market opportunity. This shift will not only contribute to a more sustainable and resilient agricultural ecosystem with higher productivity but also position gender-inclusive agritech as a strategic business imperative for the private sector.

BOX 2 **Gender-inclusive agritech**

In this report, gender-inclusive agritech refers to agricultural technology and practices designed to address the needs, challenges and opportunities of both men and women with the view to promote gender equality between men and women farmers.[17]

This approach includes creating digital solutions that are accessible and easy to use for women, offering training and support to enable uptake of these digital solutions, and building environments where these technologies can enhance women's involvement in agricultural decision-making processes.

Report objectives and methodology

This report analyses gender inclusivity in agritech as a smart business approach aimed at sustainably serving a critical customer segment, women farmers, nearly 50% of the serviceable market. In doing so, the report also highlights key principles through which agritech companies can capture this market share while driving innovation and growth in the sector. The report primarily seeks to:

1. Present challenges that must be addressed to enable the uptake of agritech among women.
2. Build a business case for gender-inclusive agritech.
3. Identify opportunities and recommendations for sector stakeholders in developing and delivering gender-inclusive agritech.

The report uses a mixed-methods approach combining primary data collection through personal interviews with secondary research. It is based on interactions with over 20 organizations working in the agritech space across Africa, Asia, Europe and the Americas, including agricultural corporates, technology service providers and innovators, multilateral organizations, non-profits and governments. The respondents represented a diverse spectrum of industries, including fintech, insurance companies, input suppliers and marketplaces.

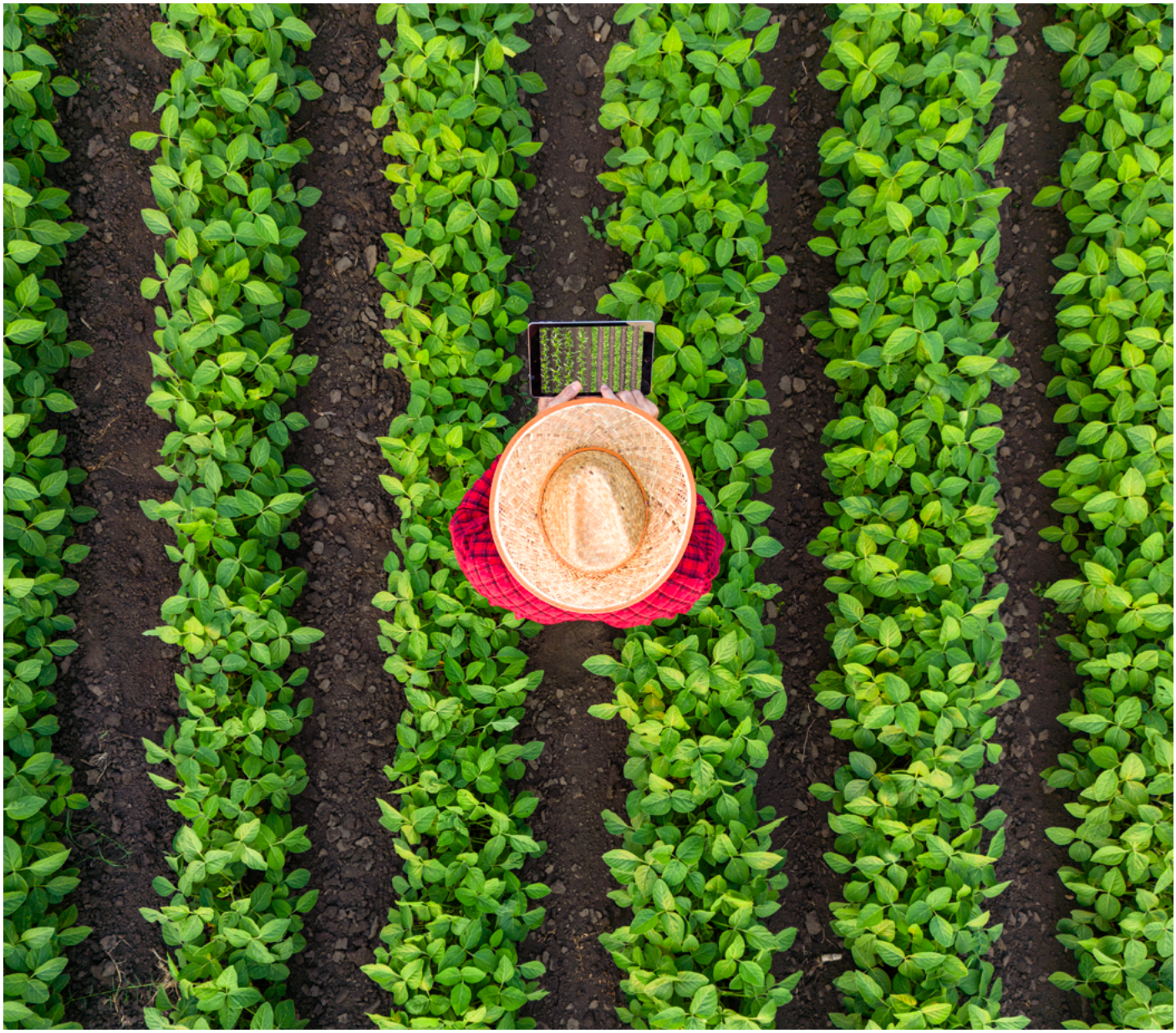
The respondents were selected based on their focus on working with women farmers and promoting women's participation in the agricultural technology sector. In-depth, semi-structured interviews were conducted with founders, executives and programme managers from each organization to gain insights into their strategies, challenges and best practices for promoting gender inclusivity.

In addition to the primary data, extensive secondary research was also carried out, reviewing relevant literature, reports and case studies on gender and agriculture, with a specific focus on the role of technology in promoting inclusivity.

TABLE 1 | **Target audience**

If you represent…	and are responsible for…	this report will help you to…
Government	Planning and developing policy related to agriculture, the food sector and women's empowerment	Gain insights into challenges faced by women farmers in adoption of agritech services Understand challenges faced by the private sector in serving women Assess policy measures that can improve the uptake of technologies by women farmers, eventually contributing to efficient agricultural systems
Private sector agricultural businesses or technology service providers	Developing products and solutions to harness technology to boost agricultural output and empower farmers	Gain insights into challenges that women may face in adopting agritech Provide an alternate view on business rationale of investing in gender inclusive agritech Provide a view on shifts in technology design and business model that will enable businesses to better serve women farmers
Development organizations or international foundations	Designing programmes/pilots to support farmers through technology in agriculture and food system	Identify high-potential use cases of gender-inclusive agritech Identify recommendations that will facilitate a stronger ecosystem for gender-inclusive agricultural technologies

Source: Framework for this table adapted from: DAI, Development Gateway, Athena Infonomics. (2023). *Farmer Centric Data Governance: Towards a New Paradigm.*



1

Barriers to gender-inclusive agricultural technologies

Women face demand-side barriers, and technology providers face supply-side challenges, both limiting technology access and gender inclusivity in agritech.

The journey towards achieving gender inclusivity within the agriculture technologies sector is fraught with challenges. Women face a myriad of obstacles when it comes to accessing and using technology despite their contribution to agricultural production. These barriers not only limit their participation but also curtail the sector's overall growth and potential.

Broadly, these barriers can be categorized into 1) demand-side challenges – challenges that women farmers face because of existing sociocultural and financial dynamics – and 2) supply-side challenges – challenges that technology solution providers face while serving women farmers (Figure 2).

FIGURE 2 **Demand-side challenges for women farmers in accessing technology and supply-side challenges for providers in serving them**

Demand-side challenges

Sociocultural barriers

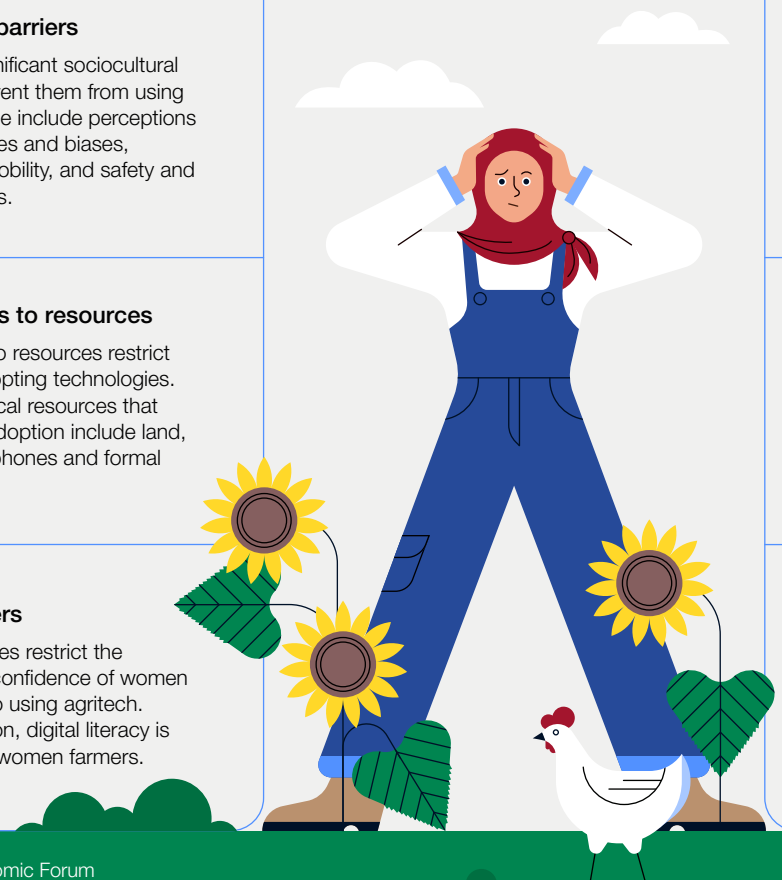
Women face significant sociocultural barriers that prevent them from using technology. These include perceptions about gender roles and biases, restrictions on mobility, and safety and security concerns.

Limited access to resources

Limited access to resources restrict women from adopting technologies. Some of the critical resources that inhibit agritech adoption include land, finance, mobile phones and formal identification.

Literacy barriers

Literacy challenges restrict the awareness and confidence of women when it comes to using agritech. Besides education, digital literacy is also low among women farmers.



Supply-side challenges

Access to gender-disaggregated data

The design of agritech for women requires a better understanding of the challenges and needs of women farmers. However, historic gender-disaggregated data is not easily available, while new data is expensive

High initial cost of acquisition

Serving women farmers may have an initial upfront customer acquisition cost that may be higher than for acquiring their male counterparts. This is because of sociocultural barriers and other mobility-related restrictions that women may face.

Underrepresentation in leadership and field roles

Women are often underrepresented in both leadership roles in technology companies and field roles for delivering agritech. While the former limits intentional design for women, the latter limits targeted delivery of agritech.

Source: World Economic Forum

Demand-side challenges

1 Sociocultural barriers

Sociocultural norms and practices can have a monumental impact on women's use of agritech, with women often facing gender biases, restricted mobility, limited education and discriminatory inheritance laws. These constraints hinder their ability to adopt and benefit from agritech solutions. Some of the sociocultural barriers that restrict agritech use among women include:

- **Perceived gender roles:** Women are often seen as primary caregivers and household managers. They are, thus, perceived as unpaid workers who perform labour-intensive farm work, mainly family-run farms, with a limited role to play in decision-making. Women often have limited time to adopt new technology or develop skills because they are expected to take on the role of household manager. This restricts their use of agritech and may also restrict them from attending related training programmes. Additionally, gender roles persist within agricultural supply chains. For example, stakeholder interviews revealed that women are often relegated to specific farm tasks, such as shelling, sowing, weeding and grading. This further restricts their use of technology. There are regions where women are restricted from operating machinery, limiting their confidence in using these technologies, while in other contexts, women are steered away from using technology from an early age.

- **Restrictions on mobility and interfaces:** Many women miss out on capacity-building programmes simply because the sessions are scheduled at inconvenient times or in locations that may not be easily accessible to them. Additionally, cultural norms and safety concerns can make women feel uncomfortable approaching male field agents, preferring to interact with female agents instead. This limits their ability to engage with agritech services.

2 Access to resources

In addition to the sociocultural challenges, women find barriers to accessing crucial resources, which impedes their ability to adopt agritech. There are four critical resources, limited access to which restricts women from adopting agritech:

- **Land ownership:** Land is an important asset for agriculture production, but women face significant barriers to owning and controlling it. Across nations, cultural and legal norms favour male inheritance, which limits women's ability to own land. For instance, the proportion of women involved in agriculture who own land is notably low, with ownership rates ranging from 4.8% in Bangladesh to 12.8% in India and less than 20% in Nigeria, Tajikistan and Peru.[18] In many regions, owning land is a prerequisite to being recognized as a farmer and accessing government agricultural schemes. Without land, people are instead classified as agricultural labourers. Due to these restrictions, many women end up working as unpaid family members or as hired labourers on other people's farms with limited decision-making power related to technology adoption.

- **Financial services:** Women struggle to obtain formal credit from commercial banks due to a lack of collateral (mainly due to limited land ownership), which prevents them from fully participating in income-generating activities or investing or paying for technologies. Only 22% of rural bank account holders in low- and middle-income countries (LMICs) are women.[19]

- **Smartphones:** In LMICs, women are 13% less likely to own a smartphone than men and 15% less likely to use mobile data.[20] Women often cite cost and digital literacy as challenges to owning and accessing a smartphone. In most cases, women may have less expensive, basic feature phones but not smartphones, restricting access to digital applications, resources, market data or agriculture support services.

- **Formal identification:** Women are less likely than men to have formal identification.[21] The absence of formal identification complicates compliance with know-your-customer (KYC) requirements. This makes it difficult for women to register for digital services related to digital payments, market access, finance or even input supply.

3 Digital literacy barriers

The educational gap underscores the broader challenges women face in accessing and using technology. Girls' enrolment and completion rates are highest at the primary education level, but these rates decline as they advance to higher levels of education. In low-income countries, girls have a primary school enrolment rate of just 78%, compared to the global average of 88%. For secondary education, 31% of girls in these regions are enrolled, compared to the global average of 66%.[22]

This educational divide is further amplified when considering digital literacy, a critical skill for adopting technologies such as agritech. Even when women have access to smartphones, they often feel uncomfortable and lack confidence in using it.

In Rwanda, around 70% of women are engaged in the agriculture sector. Despite such figures, women face challenges such as a lack of land, limited agricultural and financial resources, and restricted market connections, all of which hinder their agricultural productivity. The use of Fourth Industrial Revolution technologies can be a game changer for women's ability to increase income and productivity, eventually contributing to the growth of a country's agricultural output. Most importantly, public-private partnership collaboration can play a crucial role in advancing gender inclusivity in the agritech sector.

Crystal Rugege, Managing Director, Centre for the Fourth Industrial Revolution, Rwanda

Supply-side challenges

While many technology service providers recognize the importance of gender inclusivity, they encounter several challenges while delivering gender-inclusive solutions. These challenges can hinder their ability to reach and impact women in agriculture effectively.

1 Access to gender-disaggregated data

Understanding the specific needs and behaviours of women in agriculture is essential for developing tailored solutions. However, many technology service providers lack access to comprehensive data that differentiate between the experiences of male and female farmers in accessing and using agritech services. Capturing such data requires significant investment in research, training and implementation and many smaller companies/start-ups lack the financial resources to allocate towards these specialized areas, especially when immediate financial returns are uncertain. This limitation hinders the ability to develop and expand tailored solutions for women farmers, including gender-sensitive training programmes or technologies designed to address specific needs.

2 High initial cost of customer acquisition

The cost of acquiring customers, particularly women farmers, poses a significant challenge for agritech companies. This encompasses various expenses related to marketing, outreach, education and support, which are often higher when targeting marginalized groups that may be restricted by sociocultural norms. For instance, reaching women farmers requires tailored marketing strategies and communication channels. Traditional marketing methods may not effectively reach women, necessitating investment in localized and culturally appropriate outreach efforts. Women farmers may have lower levels of education or less experience with technology, requiring companies to invest in comprehensive training programmes. These programmes need to be accessible, often involving additional costs for translation into local languages and adapting training materials to different literacy levels.

3 Underrepresentation in leadership and field roles

Less than a quarter of leadership roles in technology companies are held by women, and gender bias is a key reason that limits their growth in technology companies.[23] The underrepresentation of women in leadership roles within agritech companies and, more broadly, technology companies is a significant challenge. This biased representation affects decision-making processes and the prioritization of a gender-inclusive approach to designing and deploying technologies. Similarly, for delivering technologies in rural settings, companies often rely on local field agents. Currently, in several emerging economies, due to cultural, social and economic factors, technology companies find it difficult to hire skilled women field agents. Over time, the lack of women field staff makes it harder for technology companies to reach and serve women farmers effectively.

2 Business case for gender-inclusive agritech

Recent market shifts and perception changes have showcased that there is a business case for investing in gender-inclusive agritech.

Conventionally, across emerging economies, the integration of a gender lens in agritech was fuelled by governments and international development agencies. Most of the earlier interventions around gender-inclusive agritech viewed the inclusion of women as empowerment. However, over time and backed by the catalytic work of such social interventions, there has been increasing acknowledgement of a potential business case for gender-inclusive agritech. Consequently, a few first movers are treating women farmers as a critical customer segment to unlock previously untapped revenue opportunities. Interviews with sector experts highlighted that, as a digital agriculture ecosystem matures, the business case for gender-inclusive agritech will only increase.

The business case for gender-inclusive agritech is emerging today because of two broad shifts: market shifts and perception shifts (in favour of women farmers). The first refers to the growing number of women farmers, while the second highlights the increasing evidence that women farmers are valuable customers for agritech providers.

FIGURE 3 | **Drivers of the business case for gender-inclusive agritech**

Market shifts

"Feminization" of agriculture

There is evidence across several countries that the participation of women in agriculture is increasing due to the outmigration of men.

Environmental, social and governance (ESG) and finance shifts

Today, gender is a critical component of the social aspect of ESG frameworks. With many impact investors also working on gender equality, being gender inclusive can reduce the cost of finance.

Reducing the gender gap in smartphones and increased use of peer-to-peer communication networks

The rapid increase in smartphone access for women in LMICs is reducing acquisition costs for women farmers. Platforms like WhatsApp and YouTube are enhancing their access to vital information and networking opportunities.

Perception shifts

Women are better borrowers

Evidence suggests that women in the agriculture sector are better borrowers than male counterparts.

Women are critical to being a rural brand

With agritechs trying to enter rural markets, there is a growing recognition that for building creditability it is necessary to be gender inclusive.

Women are more responsive

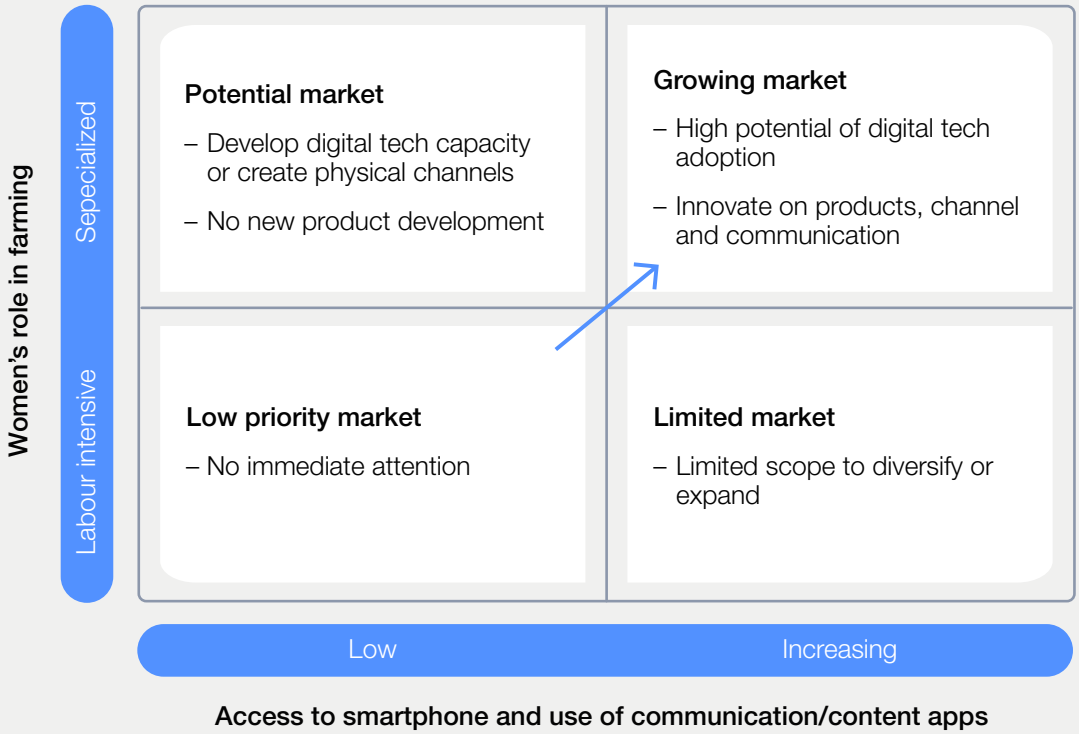
Anecdotal evidence suggests that women are more responsive to the private sector's capacity-building and training efforts, making them better customers from an return on investment perspective.

Source: World Economic Forum

Market shifts

In recent years, new trends have emerged that are expected to make serving women farmers more economically viable. These range from the identification of women as critical demand drivers for agritech to the easier availability of impact finance and narrowing gender gaps in smartphone penetration. It is critical to observe that due to these factors, women farmers are poised to become a high-potential market segment for agritech services. This shift calls for attention from agritech service providers to innovate on products, channels and communications.

FIGURE 4 | **Emerging market opportunities for gender-inclusive agritech**



Source: World Economic Forum

1 Feminization of agriculture unlocking a new customer segment

Today, evidence shows that in several developing countries, the number of women participating in agriculture has grown compared to men. This trend, where women are likely to become the primary workforce of the agriculture sector, is known as "the feminization of agriculture"[24] and is being driven by the increasing rural-to-urban migration of men. As more women take on roles as cultivators, entrepreneurs and labourers, the need to tailor agritech solutions to meet their specific needs is becoming critical. Doing so not only has social implications but also unlocks a previously underserved customer segment, creating significant business opportunities for agritech companies.

Gender-inclusive agritech can unlock untapped potential for sustainable growth and development. Collaborative efforts of government, private sectors, startups, academia, investors and civil society are essential to leverage agritech solutions that address the unique challenges faced by women farmers and empower them with access to technology and agricultural resources. Empowering women in Saudi Arabia's agriculture sector is key to realizing Vision 2030, as their contributions are vital to food security and sustainable rural development.

Basma AlBuhairan, Managing Director, Centre for the Fourth Industrial Revolution Saudi Arabia

BOX 3 | **Feminization of agriculture: a case from India**

The *Economic Survey of India 2017-18* highlighted the growing feminization of agriculture in India due to men's increased rural-to-urban migration. The feminization of agriculture is not just a temporary trend but a structural shift that requires a long-term strategy. The rise in the proportion of skilled agriculture labourers among women (from 48% in 2018-19 to 59.4% in 2022-23[25]) indicates a growing trend of women taking up more specialized roles in agriculture. Moreover, the decline in the share of elementary agriculture labourers among women, from 23.4% to 16.6% over the same period, suggests that women are moving towards more market-oriented roles.[26]

Women working in agriculture are twice as likely to be between the ages of 15 and 45 than over 45.[27] As more women take on prominent roles in the agriculture sector and many become early adopters of technology, using platforms like WhatsApp, a valuable new market segment is emerging.

2 Availability of ESG and impact finance

Gender is a critical component of environmental, social and governance (ESG) frameworks, and predictions suggest that the adoption of ESG frameworks will increase over time among asset managers. For instance, by 2025, 33% of global asset managers are likely to adopt ESG frameworks.[28] The same is true for investors using a gender lens explicitly. Between 2007 and 2021, the number of funds that use a gender lens increased by 250%.[29] Owing to these market shifts, having a focus on gender as a core part of a company's business model is likely to ease access to capital in the long run.

3 Reducing the gender gap in smartphones

Promisingly, in 2023, mobile internet adoption increased among women, accompanied by a shrinking gender gap in smartphone ownership.[30] As more women gain access to smartphones and mobile internet, agritech companies are likely to find it less expensive to reach and serve women farmers. Additionally, the total serviceable market of women farmers will increase.

4 Increased use of messaging and video-sharing platforms

Access and increased use of smartphones are leading to more rural women accessing messaging services such as WhatsApp and YouTube. These digital platforms are opening new doors for women to access information and be part of a virtual community. It is estimated that, globally, 47.1% of WhatsApp users are women.[31] In India, 37.8% of WhatsApp users are women.[32]

Perception shifts

Besides increased female participation in agriculture, interviews with stakeholders from the agritech ecosystem highlighted several other reasons why businesses believe that investing in gender-inclusive solutions can create both business value and transformational social impact. These reasons mostly involve changes in perceptions of women as a customer segment.

1 Women are better borrowers, highlighting their commitment and disciplined approach

One of the key areas where gender inclusivity can drive economic growth is through improving access to credit for women farmers. Women often face barriers in access to formal credit due to a lack of collateral and land ownership rights.

However, interviews suggested that when given the opportunity, women demonstrate strong repayment patterns. For instance, women are more reliable credit borrowers as they are 10% more likely to repay the equated monthly instalment on time than male borrowers.[33] This is attributed to strong repayment discipline and financial management skills developed through self-help groups (SHGs). Similarly, women-led farmers' producer organizations (FPOs) show greater financial independence, with fewer women needing to borrow money from their households to cover the share capital (22% vs 40% in the non-access programme comparison).[34] Further, women FPO leaders are often recognized for their careful accounting and risk management practices, which make them more mindful of debt and lead to more practical decision-making skills. Higher repayment rates and better credit behaviour among women can reduce the risks for financial institutions and investors who are either funding agritech companies or providing loans to women adopting agritech services.

2 Women farmers are more responsive and responsible towards capacity-building initiatives

Women farmers often demonstrate greater responsiveness to agricultural interventions compared to their male counterparts. They are interested in understanding the "know-how" during training sessions. Most of the respondents interviewed for the study agreed women bring a unique blend of curiosity, discipline and sincerity to their work, making them efficient and committed partners. Due to these attributes, agritech companies can benefit from working with women farmers.

3 Working with women is critical to being a truly rural brand

Market entry into rural settings often requires building trust and credibility. As a result, several agritech companies believe that to ease market entry and become a rural brand, they must work with women farmers. This strategic approach allows companies to strengthen their brand identity, scale across rural areas and eventually reduce the costs of marketing and customer acquisition.

CASE STUDY 1

Yara India's perspective on working with women

Yara India, a crop nutrition company, produces high-quality fertilizers and gives best-practice advice to people working with fertilizers in the supply chain and as end users. They have developed innovative mobile applications aimed at enhancing agricultural practices.

The YaraConnect app is designed specifically for retailers selling Yara products, featuring a reward-based loyalty programme that incentivizes sales and provides access to expert farming knowledge. This app enables retailers to better serve farmers, facilitating a more efficient agricultural ecosystem. Yara FarmCare app supports farmers directly by offering tools such as a fertilizer calculator, a digital leaf colour chart for assessing crop nitrogen status and hyperlocal weather forecasts. These features are intended to improve farming efficiency, optimize resource use and ultimately enhance crop yields.

Their capacity-building programmes have revealed that female farmers are more responsive to training. They are meticulous, open and genuinely interested in learning about new products/solutions. Based on these observations, Yara believes that investing in women farmers can be instrumental to a more inclusive agriculture ecosystem, making them promising customers for their products.

"At Yara, our business strategy centres on collaborating with proactive and responsive farmers and partnering with women farmers presents a significant opportunity to expand our agritech solutions. From our experience, women farmers tend to be more responsive compared to their male counterparts. By providing targeted capacity-building training and access to technology, we can enhance our business operations and boost women's participation and impact within the agritech sector.

Sanjiv Kanwar, Managing Director, Yara India

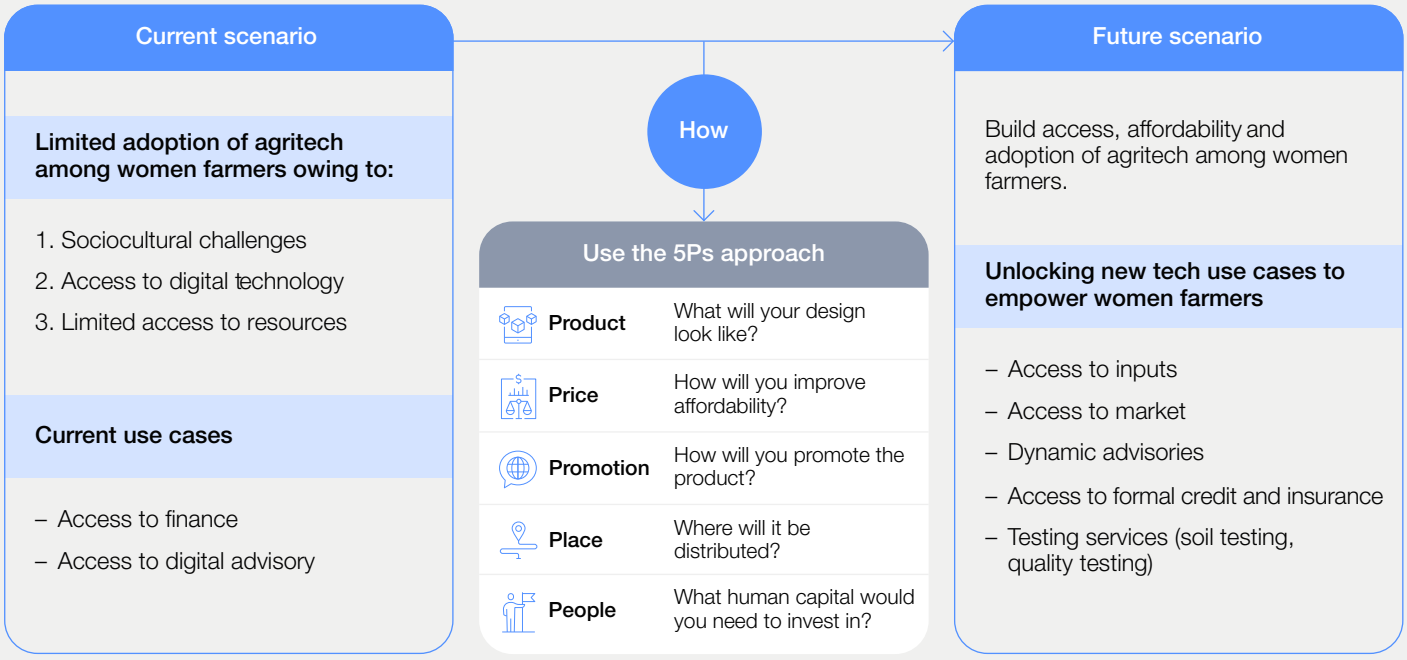
3 Recommendations

Technology providers should innovate across the 5Ps to boost agritech adoption among women farmers.

Based on the ongoing market and perception shifts, the role of women in agriculture is expected to grow significantly, along with their increased autonomy in farm-level decision-making. Hence, it is necessary for stakeholders to adapt approaches to meet evolving needs. Anecdotal evidence indicates that, currently, women are being provided with only a few agritech services, such as advisory and financial services. It is vital to introduce women in agriculture to a more holistic set of services, such as access to essential inputs, market linkages, dynamic real-time advisory support and advanced soil testing services for a greater impact.

Against this backdrop, this chapter offers recommendations for key stakeholders such as technology service providers, development organizations, government entities and non-governmental organizations. The intention is for stakeholders to integrate these recommendations into their current initiatives or to apply them to new projects.

FIGURE 5 **Applying the 5Ps approach to overcome current challenges and unlock future opportunities**



Source: World Economic Forum

Recommendations for technology service providers: "5Ps" approach for gender-inclusive agritech

While working on gender-inclusive agritech, technology service providers should focus on the "5Ps" – product, price, promotion, place and people – and customize them to the needs and challenges of women farmers.[35]

Table 2 outlines each component of the 5Ps approach and includes recommendations for stakeholders to consider in developing gender-inclusive agritech solutions.

TABLE 2 **Components of the 5Ps approach and recommendations for gender-inclusive agritech solutions**

5Ps	Description	How?
Product	Craft agritech solutions that are tailored to the unique needs and challenges of end-users including women.	**Focus on intuitive user experience design** to improve ease of use **Study and identify value chains that have a higher participation of women** to lower acquisition costs and improve outreach to women farmers **Test prototypes with women** to ensure relevance, usability and effectiveness **Consider "low-tech" channels** such as radio or interactive voice response (IVR) for sharing advisory with women farmers **Collect gender-disaggregated data** to refine agritech products for better serve women farmers throughout the product life cycle
Price	Ensure that solutions are affordable and accessible to women farmers to catalyse adoption.	**Consider bundling services**, including combining financial services (such as insurance and credit), with agricultural services (like advisory and market connections) **Consider alternate revenue models** including commission-based/pay-as-you-go models to ensure that women are not directly charged for products.
Promotion	Promote agritech solutions effectively through channels that women farmers conventionally associate with, and celebrate successful adoption.	**Leverage influential women and champion farmers** to demonstrate technology benefits, using their advocacy to encourage other women to adopt agritech solutions. **Share success stories** of women farmers who have benefited from agritech solutions to inspire and encourage others. **Use women focused messaging and communication**, such as SMS, text and videos that are accessible on mobile phones.
Place	Ensure that agritech solutions are accessible in the locations and channels that overcome mobility barriers.	**Use existing distributing channels**, such as self-help group or village saving groups, that are convenient for women to access and adopt agritech solutions. **Identify suitable locations** for trainings and capacity building that overcome mobility restrictions.
People	Engage and empower the number of women in frontline roles to effectively engage and support women farmers. Simultaneously build the capacities of women farmers.	**Organize training and capacity building programmes** for women farmers on how to use agritech solutions effectively. **Onboard women in sales teams** to enhance digital service uptake. **Segment women farmers to** provide targeted services and capacity building.

Recommendation 1: Product

The first stage is to design a product that caters to the needs of each customer segment, including women. While designing gender-inclusive agricultural technologies, it is crucial for technology service providers to adopt a bottom-up approach. This approach involves engaging directly with the end-users – women farmers, in this case, right from the start of the design process. Some of the ways in which gender inclusiveness can be integrated into the design phase include:

1. **Create a user-friendly interface and experience:** For farmer-facing applications, technology service providers should create a UI/UX (user interface/user experience) that is intuitive and user-friendly. They should also take into consideration the varying levels of digital literacy and access to technology among women farmers. For instance, in the case of dynamic advisory services, visuals and videos are generally seen to perform better compared to text messages. Similarly, providing local language support in audio can help establish trust and uptake. It is also necessary to limit clutter on applications to allow easier visibility of core features. While developing wireframes for user interface and experience, service providers should co-design elements with focus groups of women farmers to understand their preferences.

2. **Study and analyse the participation of women in different value chains:** Certain value chains have a predominance of women farmers. For instance, women comprise a critical part of plantation-linked supply chains like tea and cotton. Technology companies can significantly lower their cost of acquiring women farmers by focusing on value chains with higher female participation, as acquisition costs tend to be higher in value chains with limited female involvement.

3. **Test initial prototypes of the solution with women:** Traditionally, most technology solutions catering to farmers have been tested with men as they are relatively easier to mobilize. However, rather than assuming that men and women form a homogenous group with similar requirements, it is essential to involve women in testing prototypes after any technology solution is developed. By engaging women in the initial test process, companies can gather feedback on the product's relevance, usability and effectiveness.

4. **Use media and channels that overcome existing barriers:** In several contexts, women farmers may have limited access to smartphones. In such cases, technology solution providers could consider "low-tech" channels such as radio or interactive voice response (IVR) for sharing advisory with women farmers.

5. **Collect gender-disaggregated data:** Service providers should focus on collecting gender-disaggregated data during data collection exercises. This data should be used throughout the technology life cycle to continually refine and enhance products to better meet the needs of women farmers.

Recommendation 2: Price

After a product is designed, service providers should encourage uptake by making it affordable for women farmers. This can be achieved through several strategies:

1. **Consider bundling services:** Combining financial services (such as insurance and credit) with agricultural services (like advisory and market connections) can address cost barriers and enhance adoption among women farmers. For example, pilots have successfully bundled digital solutions, such as insurance, with everyday household products like table salt. In many emerging economies, where women typically handle household purchases, such bundling strategies can facilitate greater uptake of digital technologies without the customer explicitly paying for agritech.

2. **Pilot alternate revenue models:** To improve affordability, service providers should also consider alternate revenue models such as commission-based models or pay-as-you-go structures. For instance, agritech focused on e-commerce or market linkages could derive revenue as a percentage of every successful transaction. Similarly, for asset-heavy technologies, technology service providers can consider equal monthly instalments or pay-as-you-go models channelled through women's savings groups.

CASE STUDY 2

Empowering genuine female agricultural entrepreneurs – Nagro Agro Credito, Brazil

Nagro Agro Credito is a Brazilian fintech company specializing in tailored financial solutions for the agricultural sector. They focus on empowering women farmers by providing direct access to credit and ensuring they are the true operators of their businesses.

Using its advanced data platform, AgriSK, Nagro sought to address a significant challenge: the misuse of women's identities in credit applications. Women were often used as "laranjas" or fronts for their male partners, who were the actual managers of the farms. This practice led to poorly managed loans and higher default rates.

To counter this issue, AgriSK restructured its credit assessment processes and implemented new protocols to verify that the women listed on loan applications were indeed the active managers of their agricultural enterprises.

This intervention had a remarkable impact, reducing default rates by 20% and empowering over 1,500 women farmers across Brazil. One key aspect of the initiative was the introduction of a direct engagement strategy, where Nagro's credit officers worked closely with women applicants to better understand their roles in the business, providing them with the necessary support and resources to take on more active management roles.

This approach not only encouraged professionalism within their businesses but also led to tangible success stories. For example, Yara, a rural producer from Minas Gerais, used the credit received from Nagro to expand her livestock, upgrade her farm's infrastructure and significantly boost her revenue. Her initial success allowed her to reinvest in her business, leading to sustained growth and long-term success. This initiative underscores the importance of directly empowering women in agriculture and has created a lasting impact on their professionalization and economic success.

> **Access to finance is a crucial catalyst for progress and empowerment in agriculture. Without appropriate financial services such as credit, savings and insurance, women in agriculture remain at a disadvantage. Gender-inclusive agritech solutions have the potential to unlock this access, driving innovation and sustainable development. Fintech institutions can play a pivotal role in advancing gender inclusivity in the agricultural sector by providing tailored financial solutions and bridging critical gaps.**
>
> Gustavo Alves, Chief Executive Officer, Nagro

Recommendation 3: Promotion

To maximize impact, it is crucial to effectively promote the product or solution to the targeted audience (women farmers in this case). Service providers should note that any promotional efforts should emphasize the advantages and relevance of the product. The following strategies can be useful to promote gender-inclusive agritech solutions:

1. **Make use of the demonstration effect of influential women/champion farmers to boost uptake:** The demonstration effect created by champion farmers or local influencers using technology solutions is critical in increasing uptake. This is crucial when the target customer segment may not have prior experience with technology. While finding influencers for creating this demonstration effect, service providers should identify women champions and use their advocacy to mobilize other women to adopt technology. These influencers could include progressive women farmers and leaders from grassroots governance structures.
2. **Develop and deploy a communication campaign:** A campaign that establishes the role of women in agriculture and shares success stories of technology adoption can boost adoption. Interviews with sector stakeholders revealed that the role of women in agriculture and their contributions to farms remain undervalued, particularly in rural areas.

This significantly restricts women from securing decision-making roles. To address this issue, service providers could launch communication campaigns that emphasize the crucial role women play in agriculture, showcase success stories of their involvement and enhance their visibility within agricultural supply chains. Such a communication campaign is likely to benefit multiple service providers, and so could also be implemented through pre-competitive collaboration models.

3. **Use women-focused messaging and communication:** Use mobile phone-accessible channels such as SMS, text and videos to promote personalized and visually engaging women-focused messaging.

Recommendation 4: Place

Technology service providers should ensure that agritech solutions are accessible through channels that have a higher proportion of women or in places that are not impacted by restricted mobility due to sociocultural norms.

1. **Use existing channels that have higher female participation:** Existing aggregation structures such as producer companies, SHGs, savings and credit cooperatives can be efficient delivery channels for agritech to women farmers. Through these channels, technology service providers could reduce the cost of acquiring additional women farmers and use the aggregated demand that these structures present. Such channels are especially critical for service providers that are delivering digital market linkages, such as e-commerce platforms.

CASE STUDY 3

Better Life Farming for Maharashtra Rural Women's Empowerment Programme (Nav Tejaswini) by Bayer Crop Science in collaboration with Maharashtra State Women's Development Corporation, India

Bayer India is a multinational agricultural company focused on crop protection and seed innovation. It works with smallholder farmers worldwide to improve agriculture and food security.

The Better Life Farming for Maharashtra Rural Women's Empowerment Programme (Nav Tejaswini) operates in the Vidarbha and Marathwada regions of Maharashtra, India. Bayer, in partnership with the Maharashtra State Women's Development Corporation, aims to build self-reliant agricultural entrepreneurship and empower women to adopt modern agricultural technologies. Additionally, by establishing local agricultural support centres, locally termed Krishi Seva Kendras (KSKs), the initiative ensures access to quality agricultural inputs and market-oriented interventions for women farmers.

Since 2020, Better Life Farming Alliance (BLFA), led by Bayer in collaboration with Maharashtra State Women's Development Corporation, has been establishing local women's federations to run KSKs. As per the BLFA approach, each KSK acts as the touchpoint for inputs and services to cover farmers from five to eight nearby villages. Currently, there are 27 operational KSKs. The programme also uses agritech solutions, such as FarmRise, which offers real-time market insights, weather forecasts and farming advice, allowing farmers to make informed decisions and reduce crop loss. Agronomists associated with the programme use Farmrise to support KSK staff and lead farmers in adopting best practices while maintaining a personal connection through in-person training and support.

To encourage more farmers to use the facilities from KSKs and digital tools such as Farmrise, the programme has mobilized female volunteers from SHGs. This approach of combining digital tools with human support has led to significant success, impacting over 12,000 farmers across 27 operational centres since 2021. The programme empowers women, enhances agricultural productivity and promotes sustainable farming practices, driving positive change in Maharashtra's rural communities.

> **The Maharashtra state government values the significant role women farmers play in shaping the state's agriculture and economy. As part of its vision to achieve a $1 trillion economy, the state government is committed to enhancing the capacity of women farmers and improving their access to advanced digital technologies. Currently, Maharashtra State Women's Development Corporation is working with 1.8 million women across Maharashtra, including 1 million smallholder women farmers, organized into SHGs at the village level and federations at the district level. Maharashtra State Women's Development Corporation's vision is to collaborate with private sector organizations to introduce agritech solutions to women farmers to improve their access to finance, market and resources.**
>
> Maya Patole, Managing Director, Maharashtra State Women's Development Corporation, Government of Maharashtra

CASE STUDY 4

Shashwat Mithaas (Sustainable Sugar Programme) by UPL, India

UPL, a global agricultural solutions company based in Mumbai, India, offers sustainable farming solutions through crop protection products and seed treatments while also using digital platforms to provide agricultural support and services.

In Maharashtra, UPL's Shashwat Mithaas (Sustainable Sugar Programme) is addressing the challenges faced by various stakeholders in the sugar industry, including farmers, sugar mills and sugar purchasers. Farmers are struggling with increasing farming costs without corresponding yield improvements, while sugar mills face shortages of sugarcane from their catchment areas, impacting their profitability. Additionally, sugar purchasers seek sustainable procurement from sugar mills but lack traceability in the supply chain. UPL brings together these stakeholders and offers interventions that address these issues.

The programme implements seven key interventions:

1. Good agricultural practices (GAPs)
2. Implementation support of GAPs
3. Pronutiva, a product that integrates biosolutions with conventional crop protection inputs
4. Digitalization for end-to-end traceability and insurance for covering the risk of farming
5. Mechanization
6. Market linkage to ensure right value to produce
7. Carbon credits to ensure returns on sustainable agriculture

To ensure greater uptake of these services, the programme focuses on building women's capacity across all seven intervention areas. Women are heavily involved in the daily operations of sugarcane farming and handle critical tasks requiring skill, such as preparing nurseries, transplanting seedlings, applying fertilizers and harvesting, while men typically engage in more physically demanding labour, such as ploughing and spraying.

The programme's focus on working with women farmers has been highly impactful. One example has been the training provided to women setting up sugarcane nurseries. These nurseries require precise skills in selecting quality sugarcane plants, treating them correctly and caring for them until they are uprooted after 45 days. This technique reduces seed costs by $54 per acre and improves crop survival rates by 30%, significantly boosting profitability for farmers. Besides customized training, intentionally selecting educated women to be a part of the programme has also driven success.

UPL's programme currently spans a 25,000-acre catchment area for various sugar mills in Maharashtra, with notable impact on over 2,000 acres predominantly managed by women farmers.

2. **Consider women's needs while implementing awareness and training programmes:** Awareness and training programmes are crucial for educating users on technology solutions and their use. When organizing these programmes at the grassroots level, it is important to account for factors such as timing and location. In many rural areas, women may miss out due to their distance from the venue, inconvenient timings or household responsibilities. By considering these factors and scheduling programmes at accessible times and locations, participation rates among women can be significantly improved.

Recommendation 5: People

By increasing the presence of women in these frontline roles, companies can enhance their outreach and build more inclusive, effective relationships with diverse farming communities, especially women. The following strategies can be adopted:

1. Organize training and capacity-building programmes: Limited digital literacy is a key barrier to women farmers adopting agritech. To overcome this barrier, businesses can partner with existing training and capacity-building programmes run by non-profits and governments to integrate modules related to digital literacy. Such literacy programmes can also be delivered via pre-competitive collaboration frameworks between multiple agritech service providers, as they will systematically build demand across use cases.

2. **Integrate more women to lead in frontline roles:** Agritech training is often led by male agents. Interviews suggested that women feel uncomfortable interacting with male agents, which impacts their willingness to adopt technology. Solutions providers should focus on onboarding women in their sales and support teams, while the government can support the inclusion of women extension agents to improve the uptake of digital services among women farmers. Women in these roles can bring unique perspectives and build stronger connections with women farmers, leading to better adoption of agritech solutions.

3. **Segment women farmers to provide targeted services:** Agritech companies should also focus on segmenting women based on their demographics or literacy levels while delivering solutions rather than treating them as homogenous groups. By targeting sub-groups that are more likely to adopt new technologies, service providers can enhance the efficiency of delivering agritech solutions. For example, since young people are more inclined to adopt agritech, young women farmers can be prioritized as early adopters and used as key channels for spreading these innovations. Similarly, segmentation allows programmes to be customized to the needs of various sub-groups, making them more efficient.

CASE STUDY 5

The Inclusive Aggregator Model (IAM) Farmerline, Ghana

Farmerline is a Ghana-based agritech company that provides smallholder farmers with access to vital agricultural information, financial services and supply chain resources through mobile technology. They help farmers improve productivity and market access by offering tools like weather updates, farming tips and connections to buyers and suppliers.

The enhanced aggregator model – implemented in Ghana by Farmerline with technical assistance from Technoserve's Commercial Agriculture for Smallholders and Agribusinesses (CASA) – was designed to empower aggregators and support smallholder farmers. This model provided three levels of service bundles, basic, medium and premium, offering a mix of input delivery, information support and aggregation services tailored to farmers' needs. Input delivery services included the provision of fertilizers, improved planting materials and farm implements, with timely delivery to ensure maximized crop yields. Information support focused on digitization and extension services to improve access to agricultural data and streamline communication between farmers and aggregators. Additionally, aggregation services facilitated harvesting, threshing and marketing of farm produce, backed by access to mechanization tools like tarpaulins, weighing scales and threshers to ensure high-quality output ready for market.

A key feature of the model was its emphasis on gender inclusivity: it engaged 25 aggregators, 56% of whom were women. This approach empowered female agricultural entrepreneurs while improving how the programme served women farmers.

The programme has reached over 2,000 farmers and demonstrates how gender-inclusive solutions can enhance business growth and livelihoods, offering farmers advisory services, inputs and access to markets. The model's value proposition centred on promoting aggregator business growth through capacity building, value addition and long-term purchase agreements at premium prices, ensuring predictable volumes and improved cash flow.

> **At Farmerline, we are dedicated to the transformative power of empowering women in agriculture. Investing in women farmers through gender-inclusive agritech solutions is essential for sustainable development. Our vision is to harness these solutions to not only uplift women but also drive business growth and improve livelihoods by providing advisory services, inputs, and market access.**
>
> Worlali Senyo, Country Manager, Farmerline Group

Ecosystem recommendations

Besides the recommendations for the private sector, there are specific systemic issues that governments and developmental organizations can address through targeted interventions. For instance, at an ecosystem level, it is important to 1) gather more data and insights on gender roles in agriculture, 2) promote high-quality jobs in agritech for women, 3) establish more women-centric structures of farmer aggregation, and 4) create an online registry of women SHGs and FPOs.

BOX 4

Recommendations for governments and developmental organizations

1. **Gather more data and insights on gender roles in agriculture:** Research and analysis of gender roles in agriculture is crucial for designing targeted interventions that can address some of the barriers women face. However, currently, such data is only available for a few value chains across a few geographies. Given that such studies are likely to create a strong foundation for the private sector to innovate in gender-inclusive agritech, governments and developmental funders should explore investing in such research to be made available publicly.

2. **Promote high-quality agritech jobs for women:** The use of digital technologies in agriculture has grown significantly, leading to the creation of high-value jobs. New roles have emerged, such as drone pilots and operators of AI-enabled quality assessment equipment. A crucial step to improving women's participation in the digital agriculture ecosystem is to incentivize women's participation in technology-based roles. India has introduced a programme that offers subsidies and interest rate reductions to women's SHGs to purchase drones. The programme also includes free training to help women become drone pilots, enabling them to earn extra income.

3. **Establish women-centric farmer organizations:** Aggregating female customers is essential for lowering the cost of acquiring them for digital agricultural services. Anecdotal evidence shows that formal group structures, like producer companies, savings groups or SHGs, can serve as effective channels for delivering services. Hence, there is significant potential for governments to establish women-owned companies, especially around value chains that have a predominance of women. Having such formal structures will aid the delivery of digital agricultural technologies.

4. **Create an online registry of women SHGs and FPOs for agritech:** Governments can create an online registry of women-led FPOs or SHGs that are engaged in agriculture. This information will help agritech companies reach out to these community institutions directly and offer agritech services. Identification, education and onboarding of customers are costly in agritech, and such a registry will be a win-win for both women farmers and service providers.

Conclusion and a call to action

As the agriculture sector evolves, it is important to ensure that women farmers, who constitute almost half of the agricultural workforce, receive equitable access to resources, including technology. Besides driving food security and gender equality, such gender-inclusive agricultural technologies will also drive the business case for agritech service providers. Hence, there is immense potential for first movers to seize this opportunity. By committing to gender inclusivity in technology design and delivery, service providers can drive significant growth while contributing to sustainable development, thereby making a lasting impact in the sector.

While companies can progress with individual efforts, the road towards gender inclusivity and equality at scale cannot be achieved in isolation. There is a need for a collaborative public-private engagement to effectively deliver solutions to women farmers. Governments must take the role of enablers by addressing systemic issues such as limited digital literacy, prevalent gender biases and restrictions on land ownership. Simultaneously, agritech companies should focus on developing innovative solutions that address the specific needs of women and explore collaboration at a pre-competitive level to build the infrastructure necessary to better serve women farmers.

As research highlights, with similar access to productive resources in agriculture, food production in developing countries could increase by 20% to 30%.[36] This shows that investing in gender-inclusive agricultural technologies is necessary not only to build more resilient businesses but also to ensure food security for a growing population facing climate threats.

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