

Global Women In Agriculture:

Research Findings

October 15, 2018



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Executive Summary



Executive Summary

Purpose of This Study

Women in agriculture **play a vital role** in society. This study was undertaken to provide Corteva Agriscience™ and other interested organizations with insight into attitudes of women in agriculture from 17 countries across five regions around the world, especially as they relate to what can be done to identify and remove barriers to gender equality in agriculture.

In preparation to conduct this study, an investigative process was undertaken to review recent research so that the questions in this survey would reflect the state of learning regarding this important group. Our literature search suggested that many entities have produced a variety of insights and measures for describing and addressing the concerns of women in agriculture. Pathways into that considerable literature may be found at:

US Agency for International Development:

<https://www.usaid.gov/what-we-do/gender-equality-and-womens-empowerment/addressing-gender-programming/agriculture>

Food and Agriculture Organization of the United Nations:

<http://www.fao.org/news/story/en/item/52011/icode/>

Empower Women (facilitated by UN Women):

<https://www.empowerwomen.org/en/resources/documents/2013/9/the-role-of-women-in-agriculture-esa-working-paper-no-1102?lang=en>

Agrilinks (U.S. Government “Feed the Future” Initiative):

<https://www.agrilinks.org/library/intervention-guide-womens-empowerment-agriculture-index-weai-practitioners-guide-selecting>

Executive Summary

Purpose of This Study (cont.)

To draw on this wealth of knowledge and experience, we included questions in our survey that have been identified by existing research as representing challenges for gender equality. The survey also included other questions to elicit an understanding of the similarities and differences of perception and experience of women in agriculture. across 17 countries that represent five different regions.

Ultimately, it is hoped that the actions that may be taken as a result of this (and other) studies in the field will enable each society to find ways to **make progress toward gender equality and empower women in agriculture** everywhere in the world.



Krysta Harden
VP External Affairs and Chief Sustainability Officer

Methodology

The survey was conducted in 17 countries in their respective native languages during the period August 22–September 11, 2018. It was implemented online, with 4,157 respondents from 17 countries spread across Europe, North America, Latin America, Asia, and Africa. Most of the women were engaged in crop farming, with others engaged in a variety of other farming and related agricultural pursuits. The farms ranged from small subsistence farms to enterprises with more than 300 employees, and the roles of those surveyed ranged from owners and managers to employees and workers.

Executive Summary

Characteristics of the Women Surveyed

The plurality of respondents, 39 percent described their homes as in an urban setting, and the smallest group, 30 percent, identified their homes as rural. The remainder categorized their homes as suburban.

A large percentage, 38 percent, said their income from farming is insufficient to meet their family's needs, implying that either they or others in their households must work other jobs to make ends meet. But there were significant differences among countries, ranging from 42 percent in Nigeria and Kenya to 5 percent in China.

The women's top concerns focused on:

- Family and children
- Financial stability
- Their Own Health
- Life Balance

Despite the several challenges they reported, the women overwhelmingly **expressed pride in their work**. Indeed, some of the highest levels of pride were from countries that reported the highest percentages for which income from farming is inadequate to meet their family's needs. But pride does not necessarily translate into happiness or satisfaction, and many women cited various aspects of gender inequality as a problem. Only half said they are equally successful as their male counterparts, only **42 percent said they have the same opportunities as men**, and only 38 percent said they can make decisions affecting their income on the same basis as men.

Executive Summary

Key Findings in Gender Equality

Gender discrimination is perceived as widespread, with some variation among countries, but significant levels everywhere, ranging from 78 percent in India to 52 percent in the United States. It includes both active* discrimination and such structural inequalities as differing educational opportunities and the need to balance their agricultural work with their role as family caregivers.

Most, 62 percent, believe discrimination has been reduced over the last 10 years, but a significant number, 31 percent, say it has either stayed the same or even gotten worse. They are optimistic about further progress – only 10 percent say it will never happen – but expect full equality will take quite some time, with the majority of women saying it will take at least a decade and possibly three or more.

*The denial of equal opportunities, a limited right to make financial decisions, and a tendency of society to not take their concerns or viewpoints seriously.

Identifying and Overcoming the Key Barriers to Gender Equality

The women identified **three key barriers to gender equality**, which are consistent with much of the existing literature:

- 37 percent of respondents said they earn less than their male counterparts
- 36 percent of respondents said they have less access to financing than men
- There is a gap, which varies somewhat from country to country, between access to agricultural technology and the training necessary to take full advantage of that technology. Although the average gap is 10 percentage points, it is considered important because of the importance of technological developments both for success in farming and for effective environmental stewardship.

Executive Summary

Identifying and Overcoming the Key Barriers to Gender Equality (cont.)

The respondents identified **five actions** they believed would help overcome these barriers:

- Better training in the practical use of agricultural technology and in land management.
- Better access to academic education.
- Protection and support for women experiencing gender discrimination.
- Raise public awareness of women's success and importance in farming and agriculture.
- Raise public awareness of the negative impacts of gender discrimination.

Recommendations

Based on these findings, the study makes **six recommendations** to empower women in agriculture:

- **Improve Training and Assistance for Technology:** Explore ways to improve the delivery of technical assistance to female farmers in maximizing their use of technology. This is particularly identified as a major need in developing countries, where women may not have as many educational advantages and need focused training on integrating important new technologies.
- **Support Women Against Discrimination:** Work with local communities, non-governmental organizations, and where appropriate, governments, to influence attitudes and laws regarding gender discrimination.
- **Improve Access to Academic Education:** Provide financial, volunteer, and other relevant support to rural schools and to universities with agricultural education programs, and support the many organizations currently working in that space. Identify appropriate partners in agricultural education both at the secondary and post-secondary level.

Executive Summary

Recommendations (cont.)

- **Improve Access to Financing for Agriculture:** Work with the financial community as well as micro-lenders and other organizations to ensure that women have equal and adequate access to financing and credit, along with the education that enables them to understand credit markets. Identify appropriate partners with which to work.
- **Raise Awareness of the Importance and Successes of Women in Agriculture:** Utilizing the full array of available channels, including social media, directly and through influencers, work to raise awareness of the importance of women in agriculture (an effort of which this study is a part), and celebrate their successes.
- **Explore Potential Interventions to Improve Work/Life Balance:** Given the finding that many female farmers live in urban areas, it is reasonable to assume they (and/or their spouses and other family members) are juggling farming duties with jobs in the city. As urban areas continue to encroach on traditional farming communities, and as people continue to find the need to supplement farm income with “regular” jobs, this challenge is likely to grow. Therefore, we recommend a deeper review of existing research, and possibly additional research on what interventions for such families would be helpful, including: better transportation/access, day care and schooling for children who may be left alone for extended periods, other. Undertake appropriate action based on the findings of that effort.

The full survey details, findings and recommendations are further explained in the following sections





Methodology and Sample Characteristics

Methodology and Sample Characteristics

Sample Overview

The sample of **4,157** was drawn from **17 countries** in North America, Latin America, Asia, Europe, and Africa. The characteristics of the sample are described below.



Sample Size

4,157



17

Countries

Region	Country	Symbol	Size
Africa (N=615)	Kenya	KE	205
	Nigeria	NG	205
	South Africa	ZA	205
Asia (N=1,005)	Australia	AU	160
	China	CN	200
	India	IN	515
Europe (N=806)	Indonesia	ID	130
	France	FR	180
	Germany	DE	135
	Great Britain	GB	185
	Italy	IT	181
Latin America (N=860)	Spain	ES	125
	Argentina	AR	177
	Brazil	BR	433
North America (N=871)	Mexico	MX	250
	Canada	CA	360
	United States	US	511
TOTAL			4,157

Methodology and Sample Characteristics

Survey



Average Age Range

29-41



Average Age

34



63%

Engaged In Crop Farming

To conduct the survey two research groups were engaged, one a global supplier and the other a regional organization specializing in Latin America. In each country, the survey was conducted in [native language](#), requiring translations between English and the following languages: Simplified Chinese, French, German, Hindi, Italian, Indonesian, Portuguese, Spanish, and Swahili. The survey translations were undertaken by each individual research supplier and reviewed and approved by Corteva Agriscience™ in-country teams before launching the surveys into their countries.

The survey was conducted during the period [August 22-September 11, 2018](#). The sample sizes reflected the research supplier database capabilities and timing requirements. Other characteristics of the survey included:

- [Online survey length of interview](#): The survey took an average of 6 minutes with a 3-10 minute range.
- [Regional distribution within country](#): Regional distribution was requested to avoid concentrated representation.
- [Legal review of the standardized survey](#): This review was requested to avoid individual gender discrimination/equality concerns.
- [Analysis](#): each country was given equal weight.

Characteristics of the Sample

Average ages (by country) of the women interviewed for this study ranged from [29 to 41](#). Average age for the sample as a whole is 34 years, with 79 percent working between [2 and 20 years in farming](#). The substantial majority, 65 percent, are engaged in crop farming, with the remainder raising livestock (for meat or dairy, or both), selling agricultural products and services, or consulting in the agriculture sector.

Methodology and Sample Characteristics

Sample Demographics



37%

Owners Or Partners



29%

Employees/Workers



38%

University Degree

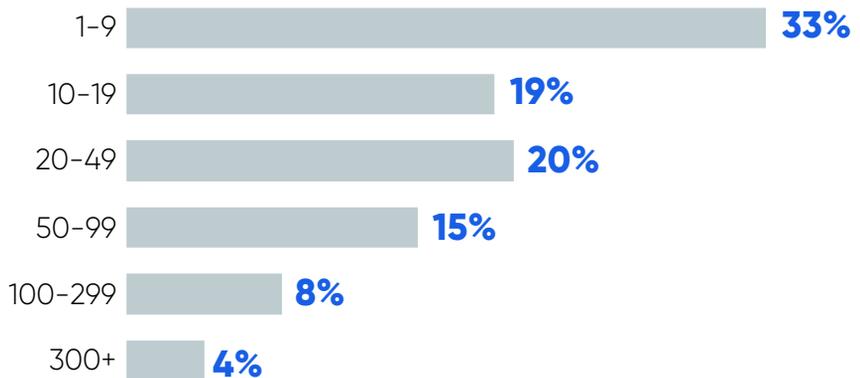


52%

Have Children Living With Them

The enterprise sizes varied considerably, with the largest group – **33 percent** – small farms of **1-9 workers**, of which 20 percent were designated as “**subsistence**” farms.

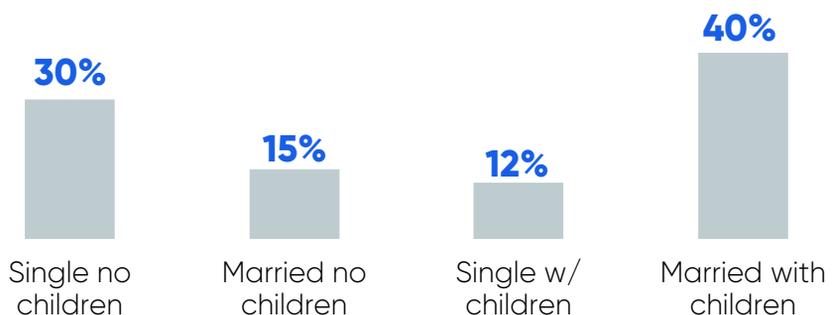
About how many employees are on the farm or ranch where you work primarily?



The role played by these farmers varied from owner to manager/administrator, supervisor, and employee/worker. The largest of these, **37 percent**, were owners or partners in the farm, and the second-largest group, at **29 percent**, were employees/workers.

The geographical, financial, and personal characteristics of the women in the sample varied considerably. There was a great range of educational levels, with the largest group – **38 percent** – having a university degree. Fully **77 percent** had some post-secondary education, and all but 5 percent had graduated from secondary school. **Fifty-two percent** of the women (the majority of them married) have children living with them.

What is your current family status?



Methodology and Sample Characteristics

Residence and Income



39%
Live In Urban Locations

Perhaps surprisingly, when asked whether they lived in urban, suburban, or rural locations, the largest segment said "urban." This may bear further inquiry, but it suggests the extent to which the expansion of cities and their conurbations are [encroaching on traditional farmland](#).

How would you describe the place where you live?



39% Urban



31% Suburban



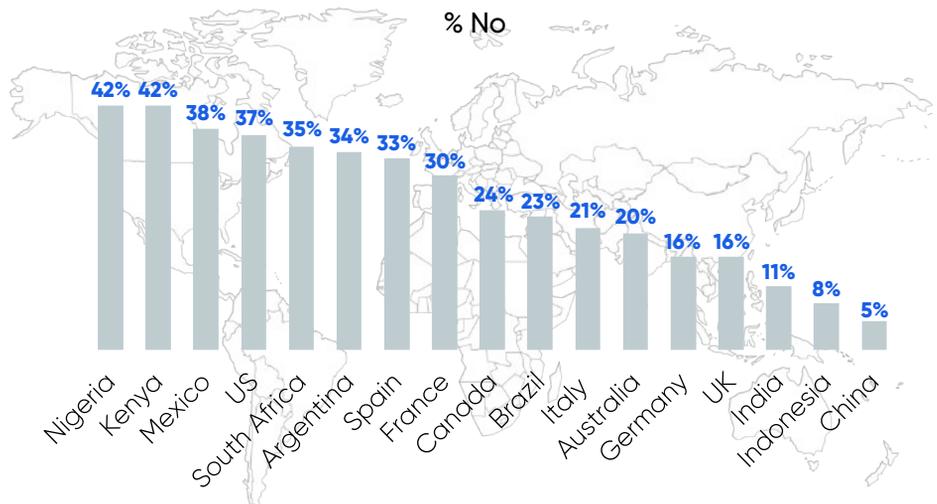
30% Rural

There was a [striking difference](#) among the 17 countries in how the women described their [financial circumstances](#). In Nigeria and Kenya, **42 percent** said their income from farming was insufficient to meet their family's needs. The next largest group was **38 percent** in Mexico. This may help explain the "urban" response noted above; many of these people, or their spouses or other family members, depend on jobs in the city to supplement their farm income.

Is your salary sufficient to support your family needs?



42%
Income From Farming Is Insufficient To Meet Family Needs ([Nigeria And Kenya](#))



38%
Income From Farming Is Insufficient To Meet Family Needs ([Mexico](#))

Methodology and Sample Characteristics

Women's Leading Concerns

Top Concerns



Family



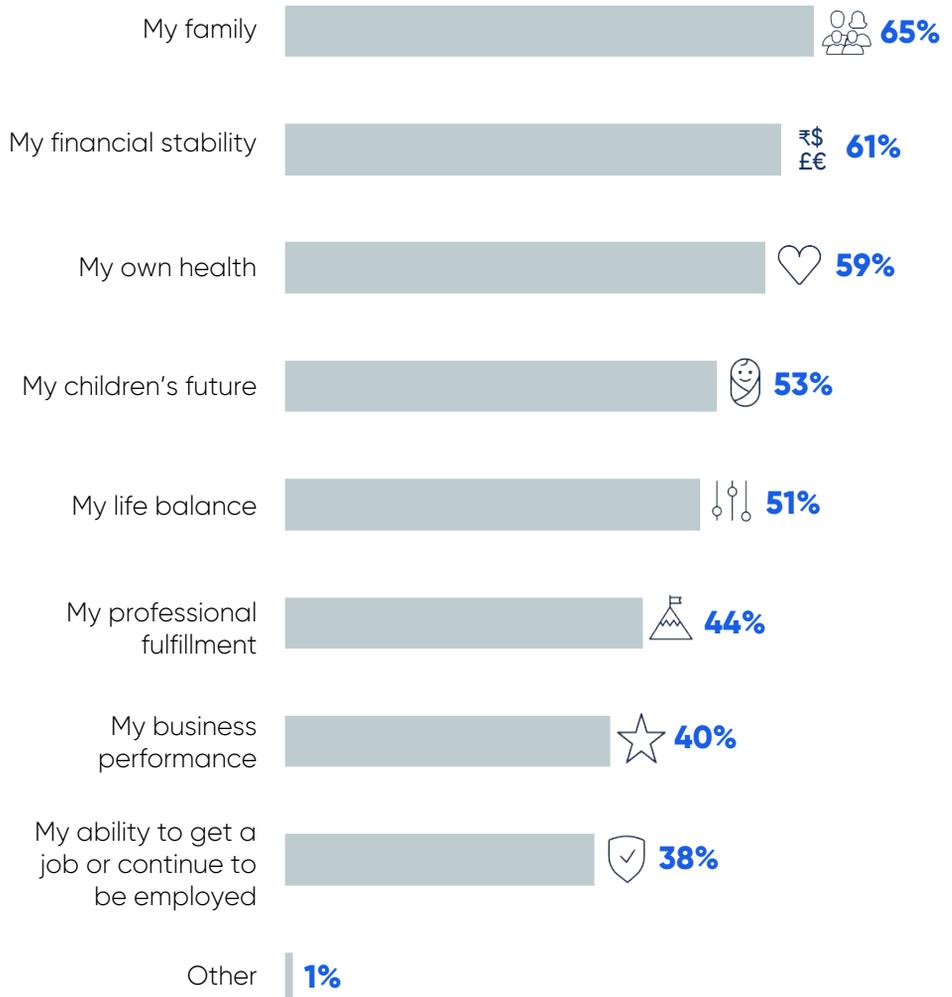
Financial Stability



Own Health

The study did not attempt to determine the poverty levels of the respondents; in other words, it did not address whether or to what degree those for whom farming income is insufficient have been able to fill the gap by other means. In light of the foregoing, it was unsurprising that concerns for family and about financial instability, as well as their own health, dominate the concerns of the female farmers in the survey.

Below is a list of statements about what is of main concern to you in your life. Please select all that are of main concern to you.

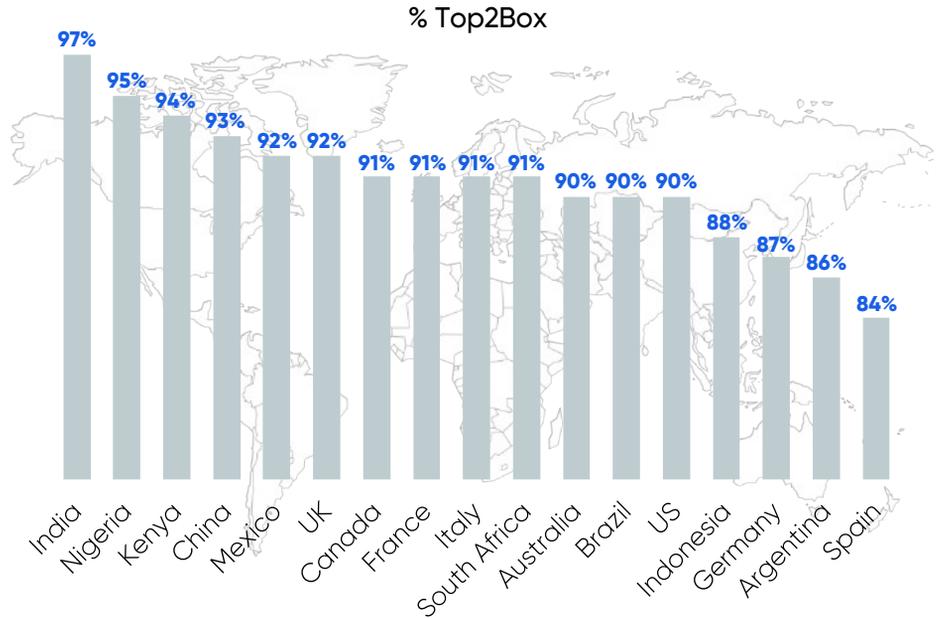


Methodology and Sample Characteristics

Pride in Agricultural Work

Despite the financial challenges, the overwhelming majority of respondents from all countries reported high levels of pride in their work.

Overall, how proud are you about working in agriculture?



Indeed, the three top countries reporting inadequate income from farming – Nigeria, Kenya, and Mexico – are among the top five countries in reporting pride in their work. This is not surprising; throughout the world, farmers have been emotionally connected to their land and their communities, and proud of the role they play in feeding the world.

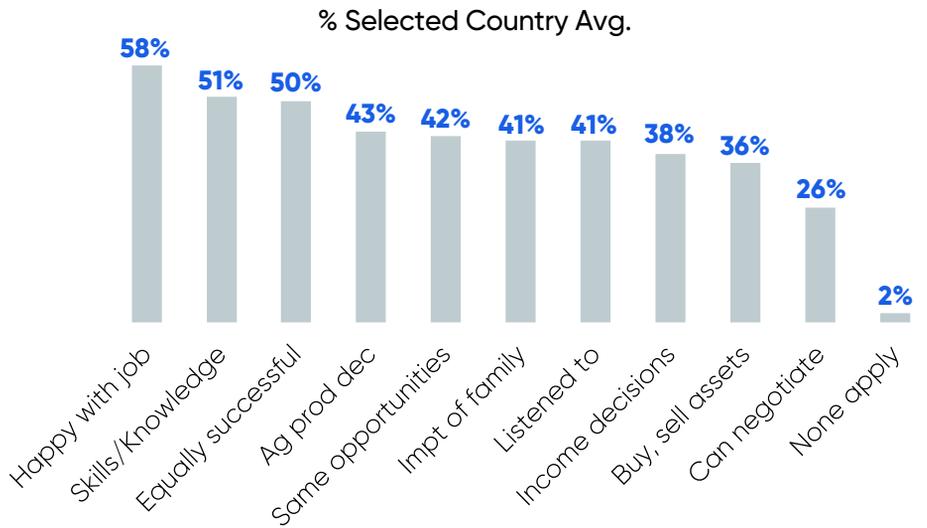
Methodology and Sample Characteristics

Happiness and Satisfaction

Pride
Happiness

But pride does not necessarily translate into happiness. Financial insecurity and other factors, especially the experience of gender inequality, negatively impact the happiness of female farmers in every country we studied.

Below is a list of statements about your general job experience in farming and agriculture. Please select all that apply to you.



The following section will explore in greater detail the issue of gender inequality, including barriers to gender equality, the opportunities for their removal, and whether women are optimistic about their future.

Findings and Analysis



Findings and Analysis

Issues in Gender Equality

There are many challenges that face women in agriculture that their male counterparts also face: vagaries of weather and the effects of climate change, unpredictable prices for their products, challenges in obtaining financing, and more. But it is clear that many women around the world believe that gender inequality adds to the burden they face in these and other areas. Therefore, our study looked more deeply into how gender inequality is identified and experienced, what the obstacles are to full equality, and how those obstacles might be reduced or eliminated.

How Women in Agriculture Perceive and Experience Gender Inequality

Gender discrimination is perceived as widespread, with some variation among countries but at significant levels everywhere, ranging from **78 percent in India** to **52 percent in the United States**. Gender discrimination is defined as the belief that one gender is treated less well than the other gender which may be reflected in different payment for the same good or services, different career or job opportunities, different financial opportunities, etc.

To what extent do you agree with the statement, Gender discrimination is an issue in the agriculture industry.



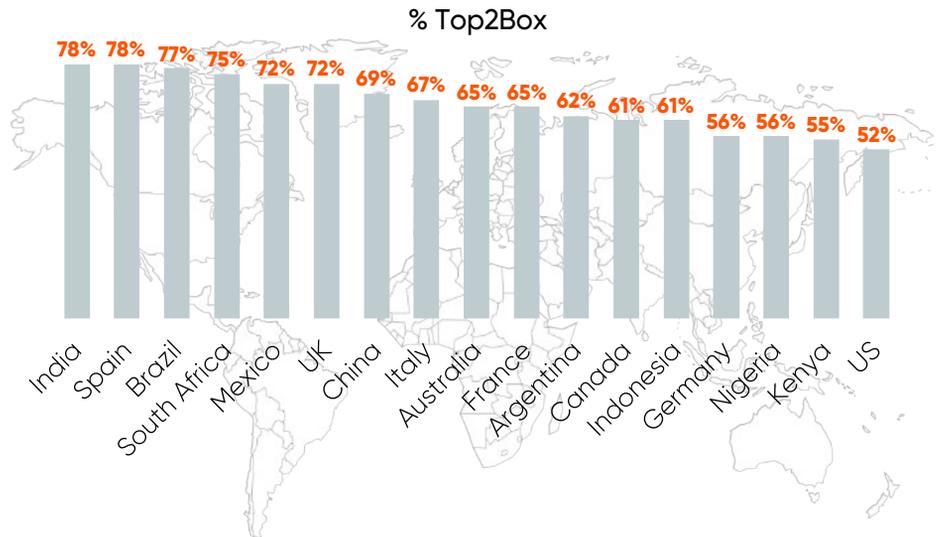
Gender Discrimination Perceived As Widespread

78%

India

52%

United States



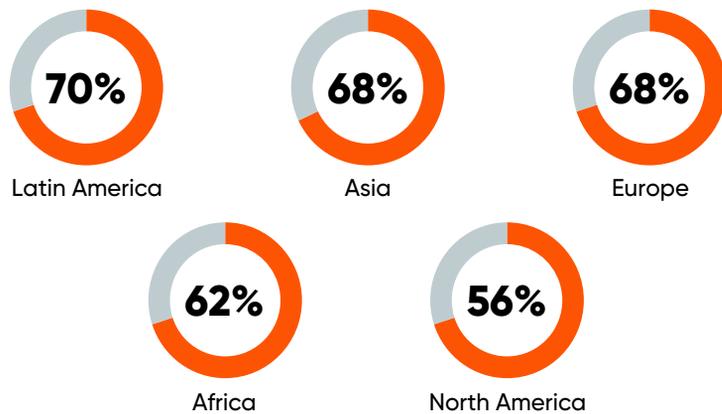
Findings and Analysis

Issues in Gender Equality

Regionally, Latin America, Asia, and Europe were most likely to report gender discrimination, but the other regions weren't far behind.

To what extent do you agree with the statement, Gender discrimination is an issue in the agriculture industry.

% Top2Box



Gender Discrimination Is An Issue For Them

37%

Strongly Agree

29%

Somewhat Agree

And across all respondents, **66 percent** of women either “strongly agree” or “somewhat agree” that gender discrimination is an issue for them. Only **7 percent** believe there is no gender discrimination at all.

Some of this inequality, respondents said, is the result of active gender discrimination, such as the denial of equal opportunities, a limited right to make financial decisions, and a tendency of society to not take their concerns or viewpoints seriously. But they also cite structural inequalities in education, training in the use of technology, and the need to balance their role as family caregivers, as sources of gender inequality that limit their ability to fulfill their potential in agriculture.

Findings and Analysis

Issues in Gender Equality



62%

Say Discrimination Has Declined Over Last 10 Years



31%

Believe It Has Stayed The Same Or Increased

On a positive note, **62 percent** of the respondents say that discrimination has declined over the last 10 years, though a significant minority, **31 percent**, believes it has either stayed the same or increased. All regions reported reduced levels of discrimination, with Africa leading the way.

How would you compare gender discrimination in the farming and agriculture industry today to 10 years ago?



62% Less Discrimination

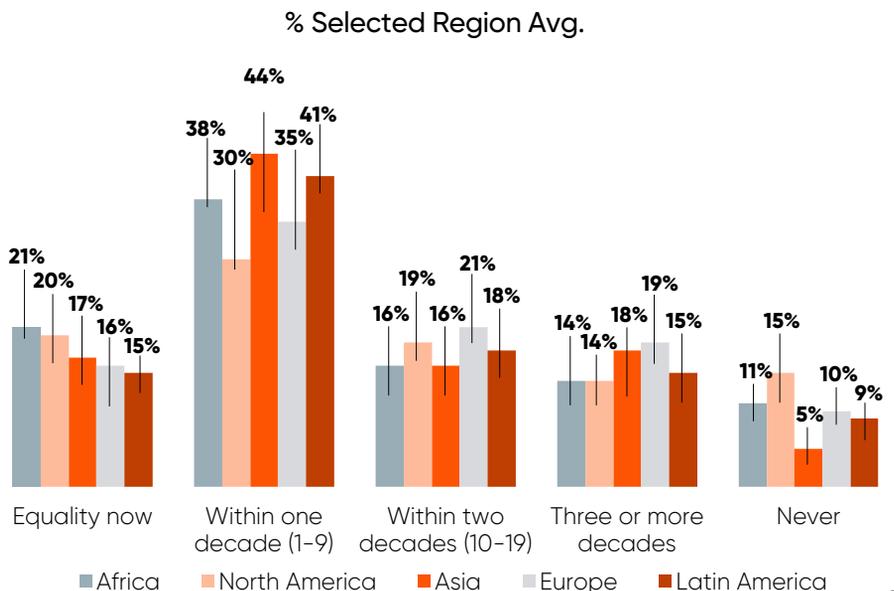
22% Same Amount

9% More Discrimination

7% No Discrimination

Women are optimistic about further progress – only **10 percent** of respondents say it will never happen. But they don't expect it any time soon. Across all regions, the majority of women say it will take at least a decade and possibly three or more to see significant improvement.

How many years do you think it will take for there to be gender equality for women and men in farming and agriculture?



Findings and Analysis

Issues in Gender Equality

Identifying the Barriers to Achieving Gender Equality for Women in Agriculture

The survey identified several areas that women in agriculture said are significant:

- They **earn less money** than their male counterparts
- They have **less access to financing** than men
- They **lack the training needed** to manage farms and to optimize the use of technological advances in farming

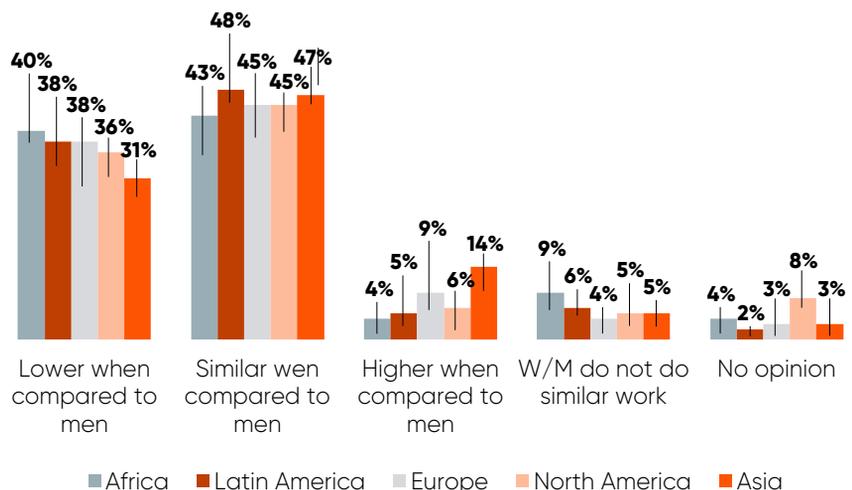
This section of the report looks at those obstacles in detail.

Salaries/Income

Although the largest group of respondents, **46 percent**, said that their salaries were similar to those of men, a significant group, **37 percent**, say they are lower. Interestingly, there was little regional variation among the women who reported incomes similar to men, but more significant variation reporting inequality, with Africa the highest at **40 percent**.

In farming and agriculture, a woman's salary seems to be:

% Selected Region Avg.



37%

Say Salaries Are Lower Than Those Of Men

Findings and Analysis

Issues in Gender Equality



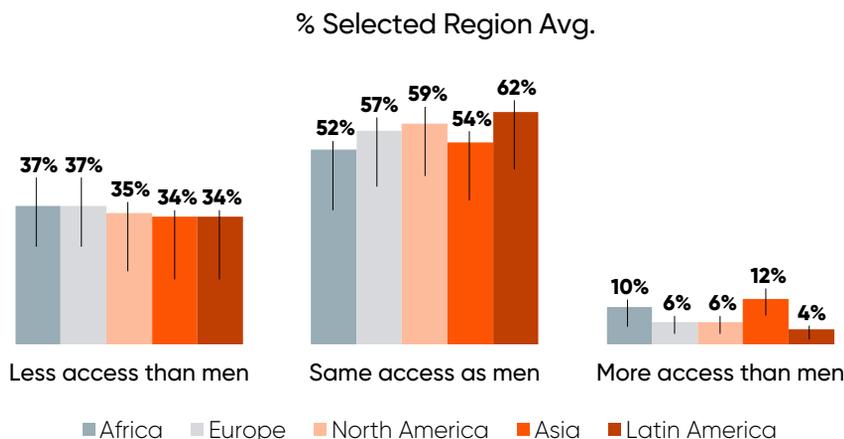
36%

Say They Have Less Access To Financing Than Males

Access to Financing

A similar percentage of women, **36 percent**, say they have less access to financing than their male counterparts, with Africa again the highest at **37 percent** but **all regions responding similarly**. Although more than half of women across all regions say they have the same access to financing as men, it is important that roughly a third believe they do not. Those women saying they have the same access tended to be more highly educated, older, and more experienced than the others in the sample.

Below is a list of statements about access to financing for women in farming and agriculture if, for example, they wanted to make a big purchase (land, farm, equipment, etc.)



Access to Technology and Training

Technology has become increasingly important to agriculture, not only in improving crop yields and economic returns, but also in protecting the environment. As has been observed:

Modern farms and agricultural operations work far differently than those a few decades ago, primarily because of advancements in technology, including sensors, devices, machines, and information technology. Today's agriculture routinely uses sophisticated technologies such as robots, temperature and moisture sensors, aerial images, and GPS technology. These advanced devices and precision agriculture and robotic systems allow businesses to be more profitable, efficient, safer, and more environmentally friendly.

Findings and Analysis

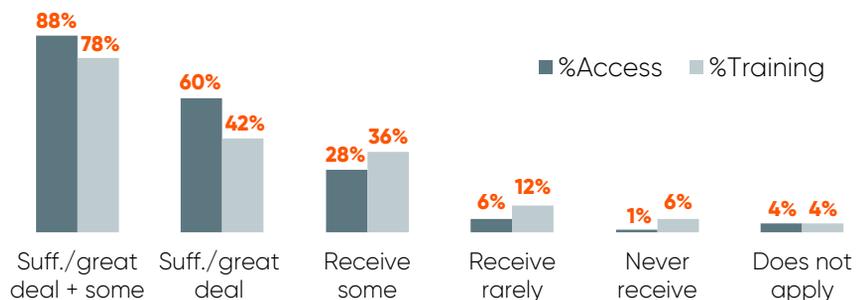
Issues in Gender Equality

Farmers no longer have to apply water, fertilizers, and pesticides uniformly across entire fields. Instead, they can use the minimum quantities required and **target** very specific areas, or even treat **individual plants** differently. Benefits include:

- Higher crop productivity
- Decreased use of water, fertilizer, and pesticides, which in turn keeps food prices down
- Reduced impact on natural ecosystems
- Less runoff of chemicals into rivers and groundwater
- Increased worker safety¹

The respondents to the survey overwhelmingly said they have sufficient access to technology. But there is a **gap between access to the technology and adequate training for them to optimize its use**. Although the difference in percentage points may appear relatively small, the impact is believed to be great given the growing importance of technology.

Which of the following statements best describes you **access** to technology in doing your job in farming, agriculture, ranching, raising livestock? Which of the following statements best describes the amount of **training** you receive to use technology at your job in farming, agriculture, ranching or raising livestock?



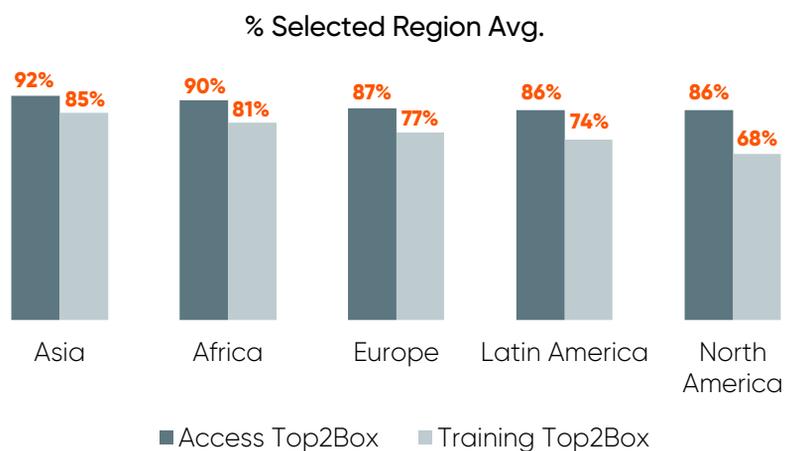
¹ U.S. Department of Agriculture, National Institute of Food and Agriculture, <https://nifa.usda.gov/topic/agriculture-technology>

Findings and Analysis

Issues in Gender Equality

Those gaps were **greatest in Latin American and North America**, but they persist across all regions.

Which of the following statements best describes your **access** to technology in doing your job in farming, agriculture, ranching, raising livestock? Which of the following statements best describes the amount of **training** you receive to use technology at your job in farming, agriculture ranching or raising livestock.



Overcoming the Barriers to Achieving Gender Equality for Women in Agriculture

The respondents identified five actions that they believed would be **helpful to promote**, if not necessarily achieve, **gender equality for women in agriculture**:

- Provide the **same overall training** in technology and land management.
- Provide the **same level of relevant academic education** as men
- Provide **protection and support** to women who are experiencing gender discrimination in income and access to financing – as well as in other ways -- including enforcement of existing laws
- Raise **public awareness of women's success** in farming and agriculture
- Raise **public awareness around the negative impacts of gender discrimination** in farming and agriculture

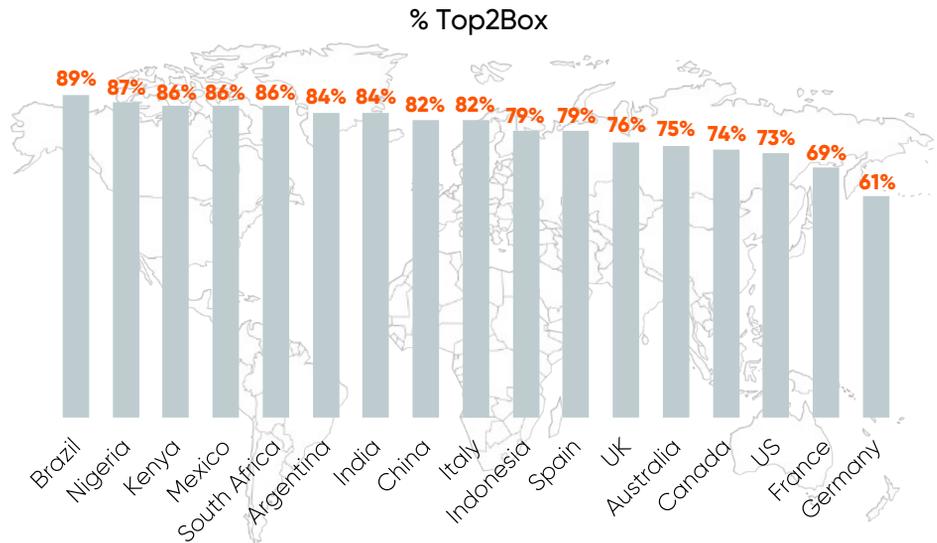
Findings and Analysis

Issues in Gender Equality

Training

A desire for training emerged as the most commonly cited need among the respondents for removing gender inequality obstacles. The numbers **significantly exceeded 50 percent for all 17 countries**, with Brazil, Nigeria, Kenya, Mexico, and South Africa leading the way, but with statistically similar responses from many other countries.

Actions that could be important in promoting gender equality in farming and agriculture: Providing women with the **same overall training**, for example in the use of new technology, land management skills and the management of employees. Please rate on a scale of 1 to 5, where 1 = Not at all important, 3 = Neutral, 5 = Very important to promoting gender equality.

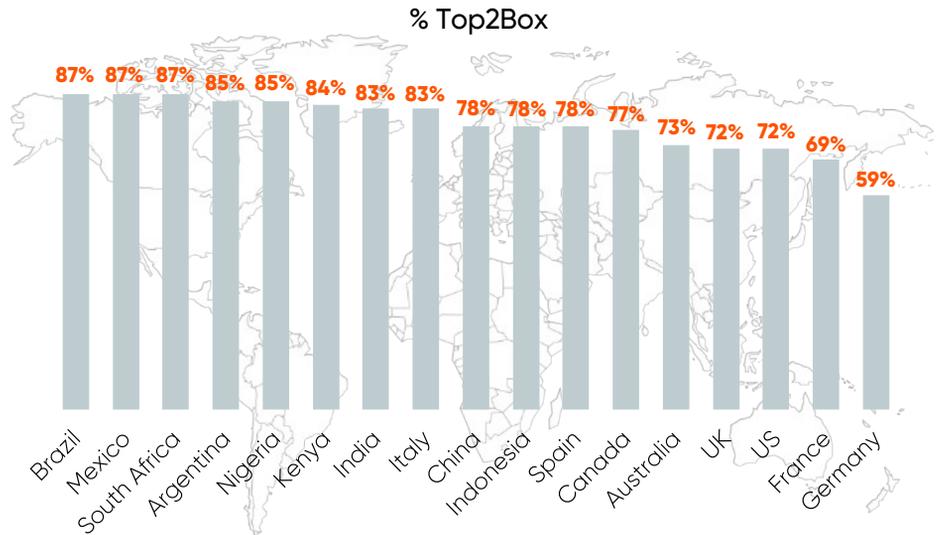


Findings and Analysis

Issues in Gender Equality

Though academic education (as distinct from more narrowly focused training) had not been identified as a major obstacle to gender inequality, it scored high as a potential corrective, especially in the regions most associated with the developing world: Latin America, Africa, and Asia.

Actions that could be important in promoting gender equality in farming and agriculture: Providing women with the **same level of relevant academic education**. Please rate on a scale of 1 to 5, where 1 = Not at all important, 3 = Neutral, 5 = Very important to promoting gender equality.

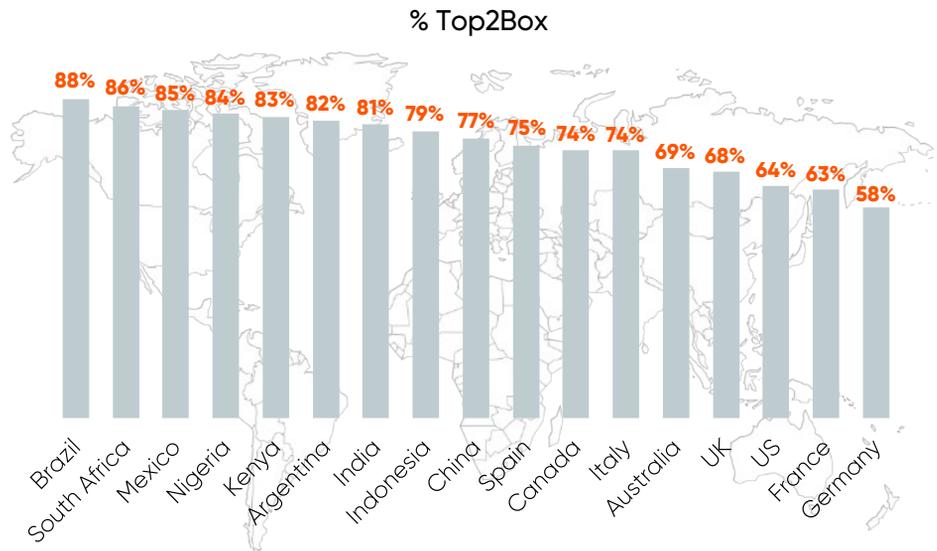


Findings and Analysis

Issues in Gender Equality

The women surveyed also strongly believe that they need protection and support, including but not limited to legal protection, to help them achieve income parity and better access to financing, and to help overcome gender discrimination in general. This was true of more than half the respondents in every country – even though most if not all of these countries already have laws regarding equal rights – and the percentages reached as high as **88 percent** in Brazil.

Actions that could be important in promoting gender equality in farming and agriculture: **Offering more support** to help women who are experiencing gender discrimination. Please rate on a scale of 1 to 5, where 1 = Not at all important, 3 = Neutral, 5 = Very important to promoting gender equality

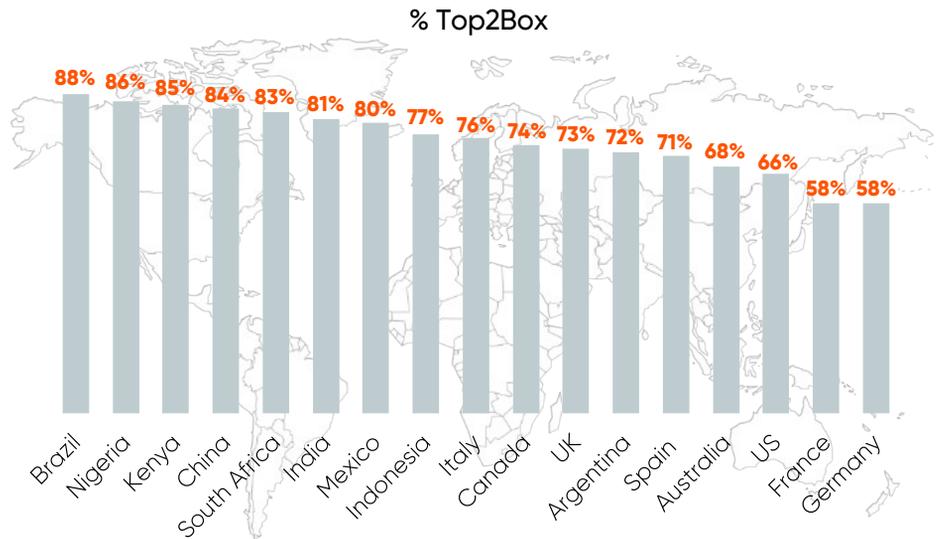


Findings and Analysis

Issues in Gender Equality

By somewhat similar percentages, the respondents believe that it is important to raise awareness of the importance of women in agriculture and in their achievements. Implicitly, they believe there is a link between being undervalued and being treated unfairly.

Actions that could be important in promoting gender equality in farming and agriculture: **Raising public awareness of successes** related to women's contributions to farming and agriculture. Please rate on a scale of 1 to 5, where 1 = Not at all important, 3 = Neutral, 5 = Very important to promoting gender equality.

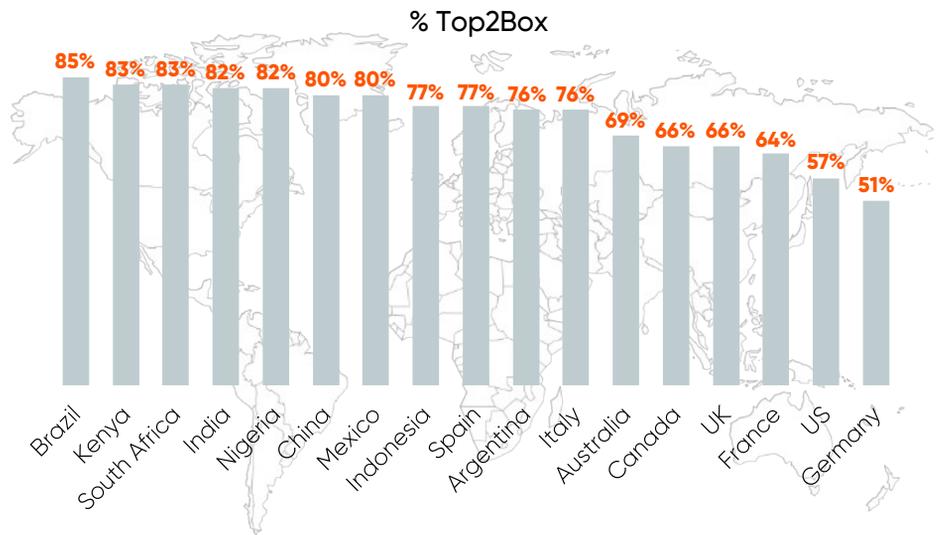


Findings and Analysis

Issues in Gender Equality

In a related vein, and also by similar percentages, women believe awareness needs to be raised about gender discrimination itself.

Actions that could be important in promoting gender equality in farming and agriculture: **Raising public awareness around gender discrimination issues** in farming and agriculture. Please rate on a scale of 1 to 5, where 1 = Not at all important, 3 = Neutral, 5 = Very important to promoting gender equality



This was especially important to respondents in Africa and Latin America, where it was cited by **83 and 81 percent**, respectively.



Recommendations

Recommendations

Empowering Women in Agriculture

As discussed earlier in this report, Corteva Agriscience™ is a company whose purpose is to enrich the lives of those who produce and those who consume, ensuring progress for generations to come. Empowering and enriching the lives of women in agriculture furthers that purpose in many ways. The most direct is the enrichment of the lives of women themselves, materially and in every other way. But enriching the lives of women in agriculture ultimately enriches the lives of everyone: the children and families who depend on them, the communities of which they are a part, and the societies that depend on them for food and more.

This broadly based study suggests that while progress has been made, gender inequality remains a barrier to women in agriculture reaching their full potential and, therefore, holds back everyone who depends on them. While the women who responded to our survey note that there has been improvement in recent years and are optimistic that it will continue, many of them also believe it won't happen soon enough, and some are pessimistic about it happening in their lifetimes, if at all. We believe this is unacceptable, and that Corteva Agriscience™ has an important role to play in accelerating the rate of progress.

We therefore recommend the following:

- **Improve Training and Assistance for Technology:** Explore ways to improve the delivery of technical assistance to female farmers in maximizing their use of technology. This is particularly identified as a major need in developing countries, where women may not have as many educational advantages and need focused training on integrating important new technologies.
- **Support Women Against Discrimination:** Work with local communities, non-governmental organizations, and where appropriate, governments, to influence attitudes and laws regarding gender discrimination.
- **Improve Access to Academic Education:** Provide financial, volunteer, and other relevant support to rural schools and to universities with agricultural education programs, and support the many organizations currently working in that space. Identify appropriate partners in agricultural education both at the secondary and post-secondary level.

Recommendations

Empowering Women in Agriculture

- **Improve Access to Financing for Agriculture:** Work with the financial community as well as micro-lenders and other organizations to ensure that women have equal and adequate access to financing and credit, along with the education that enables them to understand credit markets. Identify appropriate partners with which to work.
- **Raise Awareness of the Importance and Successes of Women in Agriculture:** Utilizing the full array of available channels, including social media, directly and through influencers, work to raise awareness of the importance of women in agriculture (an effort of which this study is a part), and celebrate their successes.
- **Explore Potential Interventions to Improve Work/Life Balance:**
Given the finding that many female farmers live in urban areas, it is reasonable to assume they (and/or their spouses and other family members) are juggling farming duties with jobs in the city. As urban areas continue to encroach on traditional farming communities, and as people continue to find the need to supplement farm income with “regular” jobs, this challenge is likely to grow. Therefore, we recommend a deeper review of existing research, and possibly additional research on what interventions for such families would be helpful, including: better transportation/access, day care and schooling for children who may be left alone for extended periods, other. Undertake appropriate action based on the findings of that effort.