



**KNOWLEDGE
TRANSFER**



WOMEN FARMERS

IN VEGETABLE PRODUCTION

Conversations in India, the Philippines, Tanzania, and Uganda

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Women Farmers in Vegetable Production

Conversations in India, the Philippines, Tanzania, and Uganda

Executive Summary

At East-West Seed Company Ltd (EWS) and East-West Seed Knowledge Transfer Foundation (EWS-KT), we are continuously looking for better ways to serve smallholder farmers and drive sustainable change. An important route to sustainable change is to further advance the role of women in transforming agriculture. This study of women engaged in vegetable farming in India, the Philippines, Tanzania, and Uganda is an opportunity for EWS and EWS-KT to raise awareness on gender in agriculture.

Though this was not a scientific or academic study, it was practical in nature and can be taken as a starting point to carefully consider the topic of gender in EWS-KT and EWS activities and beyond. The study had 2 main parts: the first part explored women's engagement in vegetable production, and the second part focused on women as integrated pest management (IPM) leaders.

Findings pertaining to Part 1 (women's engagement in vegetable production)

- Provide insight into the typical day of women farmers in the selected countries, giving EWS-KT staff a fuller understanding of the best times to engage with women farmers during the day.
- Indicate that there is room for improvement regarding women farmers' access to resources and decision-making power.
- Show that women farmers have a positive perception of being women farmers.
- Identify major challenges and opportunities that women farmers have.

Findings pertaining to Part 2 (women as IPM leaders)

- Provide insight into women's roles and activities in the area of pest and disease control.
- Identify the sources of information that women farmers have access to.
- Show that access to technology could play a key role in supporting women farmers.

Introduction

East-West Seed Company Ltd (EWS) was founded in 1982 with a mission to improve the income of farmers through access to high-quality vegetable seeds. In 2015, the company set up East- West Seed Knowledge Transfer Foundation (EWS-KT), which seeks to increase the income of smallholder vegetable farmers by sharing the knowledge and skills needed to improve their productivity.

In October 2022, East-West Seed celebrated its 40-year anniversary. This milestone was an excellent opportunity to put women in vegetable production in the spotlight.

Acknowledging the important role women play in agriculture is not a new thing. In fact, EWS-KT has already taken action on the ground. As EWS and EWS-KT are continuously looking for better ways to serve smallholder farmers and drive sustainable change, they are using the company's anniversary as a time to explore how they can further advance the role of women in transforming agriculture. This is an opportunity for teams from EWS and EWS-KT to raise awareness on gender in agriculture, focusing on vegetable farming.

Purpose of the Study

The study was designed to:

- Get contextual information on women farmers involved in vegetable production in countries where EWS and EWS-KT work
- Find practical methods to increase women's control of decision making, and thereby their empowerment, in vegetable production
- Build the capacity of EWS and EWS-KT teams in understanding gender issues in their working areas
- Increase knowledge on gender in agriculture, focusing on vegetable farming
- Deliver concrete findings for future action:
 - For EWS, how to serve female farmers better with seeds
 - For EWS-KT, how to better reach and empower female farmers

Methodology and Limitations

Study Design

The study was conducted in 4 countries: India, the Philippines, Tanzania, and Uganda. The countries were chosen to reflect the variety of countries where EWS-KT and EWS are present.

A global team was formed, with staff from EWS-KT and EWS. The team received good support in designing the study from 4 advisors working in international organizations. The study was divided into 2 parts:

1. Women farmers in vegetable production
2. Women as integrated pest management (IPM) leaders

Methodology

For Part 1, qualitative data was collected through interviews of successful women vegetable farmers and focus group discussions (FGDs).

For Part 2, quantitative data was collected through interviews, using a questionnaire developed by Grow Asia. The questionnaires were tested in Uganda and Tanzania before being rolled out in all 4 countries.

For both parts of the study, data was collected from women engaged in vegetable farming with whom EWS-KT or EWS staff had had previous direct contact through knowledge transfer or marketing activities.

In Uganda, Tanzania, and the Philippines, staff from EWS Sales & Marketing and EWS-KT conducted the interviews and focus group discussions. This methodology was chosen in order to contribute to the objective of increasing staff understanding of gender issues in agriculture. In India, the focus group discussions were held by EWS-KT, while the interviews and surveys were conducted by a third party.

Through their interviews and conversations with women farmers, EWS-KT and EWS staff members gained increased awareness of gender inequalities and of women farmers' work and knowledge of vegetable production. Reflection by these staff members on the study process and findings resulted in possible approaches and steps to improve the services provided to women farmers by EWS-KT and EWS (see Annex 6). EWS-KT staff have already directly applied some learnings, such as having small groups of women for training and holding trainings at the best time for women to attend.

The FGDs and interviews took place between June and September 2022 in the following locations:

- Tanzania: Kahama/Mwanza and Moshi
- Uganda: West Nile and Lira
- Philippines: Nueva Ecija and Pangasinan
- India: Madhya Pradesh and Odisha

Data collection for women farmers in vegetable production (Part 1)

The number of focus group discussions and individual interviews conducted is summarized in Table 1. The number of successful women farmers interviewed was

lower than specified in the protocol, except in India, where it was higher than the protocol due to a misinterpretation.

Table 1. Overview of data collection for Part 1

Country	Interviews of Successful Women Farmers	Focus Group Discussions
Tanzania	3 (Protocol: 6)	8 (5 women-only FGDs, 2 mixed FGDs, 1 men-only FGD)
Uganda	5 (Protocol: 6)	8 (4 women-only FGDs, 2 mixed FGDs, 2 men- only FGDs)
India	63 (Protocol: 8)	10 (8 women-only FGDs, 2 men-only FGDs)
Philippines	2 (Protocol: 6)	9 (5 women-only FGDs, 2 mixed FGDs, 2 men- only FGDs)

Data collection for women as IPM leaders (Part 2)

The total number of respondents to the IPM survey was 172, of which 153 (89%) were female and 19 (11%) were male, as shown in Table 2.

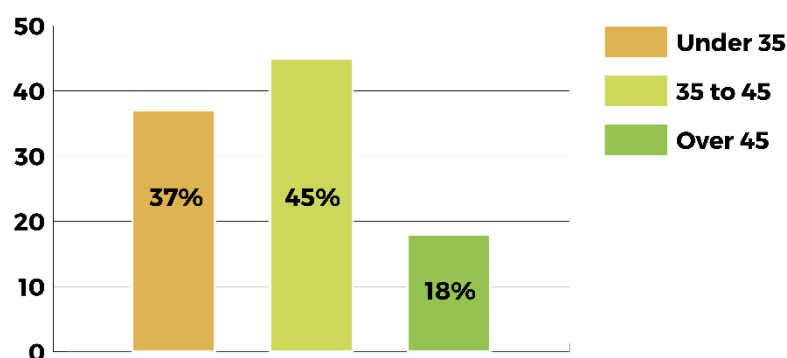
Table 2. Sample size for Part 2

Country	Women	Men
Tanzania	33	0
Uganda	25	8
India	63	0
Philippines	32	11
Subtotal	153	19
Total	172	

Age distribution of the farmers

Age distribution for the whole sample size (Part 1 and Part 2) is presented in Figure 1: 45% of the respondents were 35–45 years old, 37% of the respondents were under 35 years old, and 18% of respondents were over 45 years old.

Figure 1. Age distribution of farmers in study sample



Limitations on the study data collection

- The responses and available data are not consistent, making it difficult to analyze them.
- Staff did not receive enough information on the study and methodology, or did not deeply engage with women farmers.

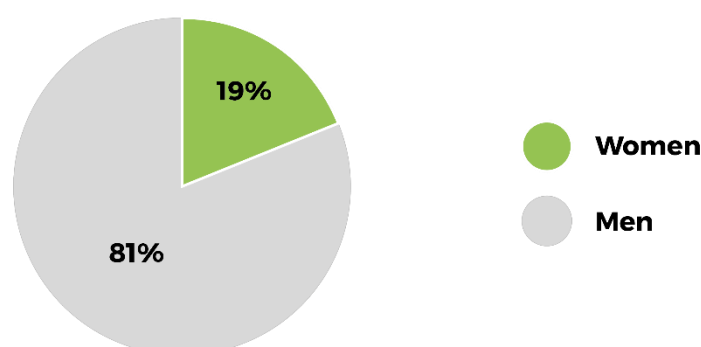
Work of EWS-KT in the Selected Countries

EWS-KT builds the skills and knowledge of smallholder vegetable farmers in Africa and Asia. EWS-KT staff provide *key farmers* with intensive field-based support at all stages of the crop cycle, from land preparation through harvest. Key farmers' demonstration fields showcase improved vegetable-growing techniques and serve as hubs of good production for training other farmers.

Tanzania

EWS-supported knowledge transfer has been an integral part of the growth of the vegetable sector in Tanzania, with various stakeholders playing a part. Formed on the backbone of Team SEVIA (a joint project of East-West Seed, Rijk Zwaan, Wageningen University, and the Dutch Government), the EWS-KT Tanzania team currently works in the Shinyanga Region, in the northwestern part of the country.

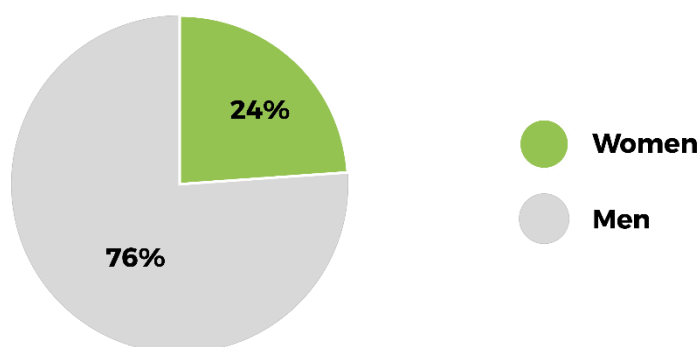
Figure 2. Key farmers by gender in Tanzania (2015–2022): 789 key farmers trained, of which 148 (19%) are women.



Uganda

EWS-KT started operations in northern Uganda in 2017 and has been able to expand its work to over 15 districts in the Eastern, Western, and Northern regions, including West Nile. More than 53,000 smallholder farmers have been trained, revitalizing moribund vegetable value chains and improving the livelihoods of rural farmers.

Figure 3. Key farmers by gender in Uganda (2017–2022): 1,644 key farmers trained, of which 398 (24%) are women.

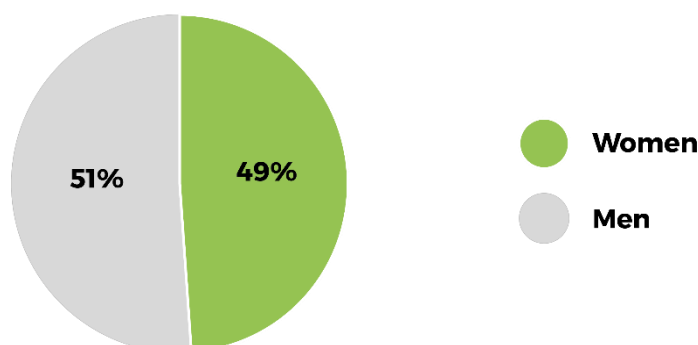


Philippines

EWS-KT was established in the Philippines in 1999 by EWS founder Simon N. Groot. EWS-KT Philippines offers a wide array of training courses on vegetable production, including Philippine Good Agricultural Practices (PhilGAP), natural farming systems, climate-smart agriculture, and integrated pest management through farmers' field school and short-duration training. Cognizant of the need to profitably manage farm business, the entrepreneurial mindset of smallholder farmers is being enhanced through farm business school. To help farmers expand market access, EWS-KT Philippines is piloting vegetable value chain support connecting farmers to buyers like consolidators, concessionaires, and food processors.

EWS-KT is undertaking its activities in Nueva Ecija, Bukidnon, Leyte, and Isabela provinces.

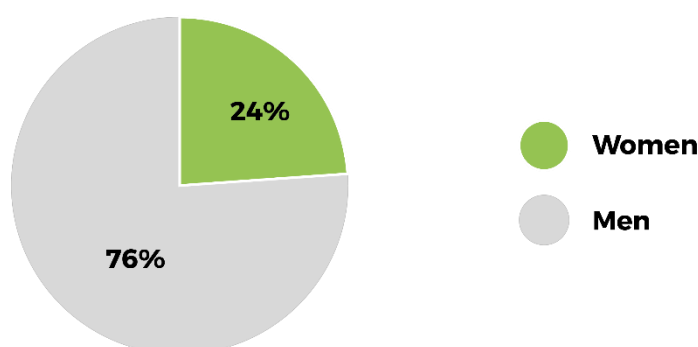
Figure 4. Key farmers by gender in the Philippines (2015–2022): 1,001 key farmers trained, of which 492 (49%) are women.



India

EWS-KT began operations in India in 2016 and has successfully trained over 66,700 vegetable farmers to increase their production and profitability. EWS-KT India connects with more than 25,000 farmers every year through direct outreach programs and reaches over 100,000 farmers through digital platforms. EWS-KT India concentrates its activities in the states of Assam, Madhya Pradesh, Odisha, and Maharashtra.

Figure 5. Key farmers by gender in India (2016–2022): 1,440 key farmers trained, of which 346 (24%) are women.



More information on EWS-KT's work in these and other countries can be found at www.ews-kt.com.

Key Findings

Key findings are organized into 2 parts, as per the design of the study.

Part 1: Key findings on women's engagement in vegetable production (from focus group discussions and interviews):

1. Typical daily life of a women vegetable farmer
2. Decision-making power of women farmers in vegetable production
3. Access to land, capital, inputs, and learning opportunities for women farmers
4. Women farmers' perceptions of being women farmers

Part 2: Key findings on women as IPM leaders (from surveys completed by smallholder women vegetable farmers, with smallholder farms defined as less than 2 hectares)

1. Activities of women farmers in pest and disease management
2. Access to information on pest and disease management
3. Access to technology
4. Women farmers' perceptions of women farmers' knowledge of pest and disease management
5. Participants' perceptions of access to trainings
6. Women farmers' expectations if women farmers become leaders in pest and disease management

Part 1: Key Findings on Women's Engagement in Vegetable Production

Typical daily life of a woman vegetable farmer

Getting a better understanding of the typical day of women farmers and the activities they are engaged in can be a valuable resource for identifying times that women are available to join activities. Therefore, this information could help EWS-KT to reach more women farmers and to reach women farmers more efficiently.

This part of the study explored the following questions:

- How much time do women dedicate to vegetable farming, in commercial fields or in home gardens, per day?
- What are their main activities each day?

The following activities were discussed in the focus group discussions:

- Cleaning the house
- Taking care of young animals
- Cooking
- Washing clothes
- Taking care of young children
- Fetching water
- Buying food
- Repairing the house
- Harvesting vegetables
- Weeding the field
- Selling the harvest
- Land preparation
- Seedling production
- Spraying
- Fertilization
- Buying agro-inputs
- Meeting/training

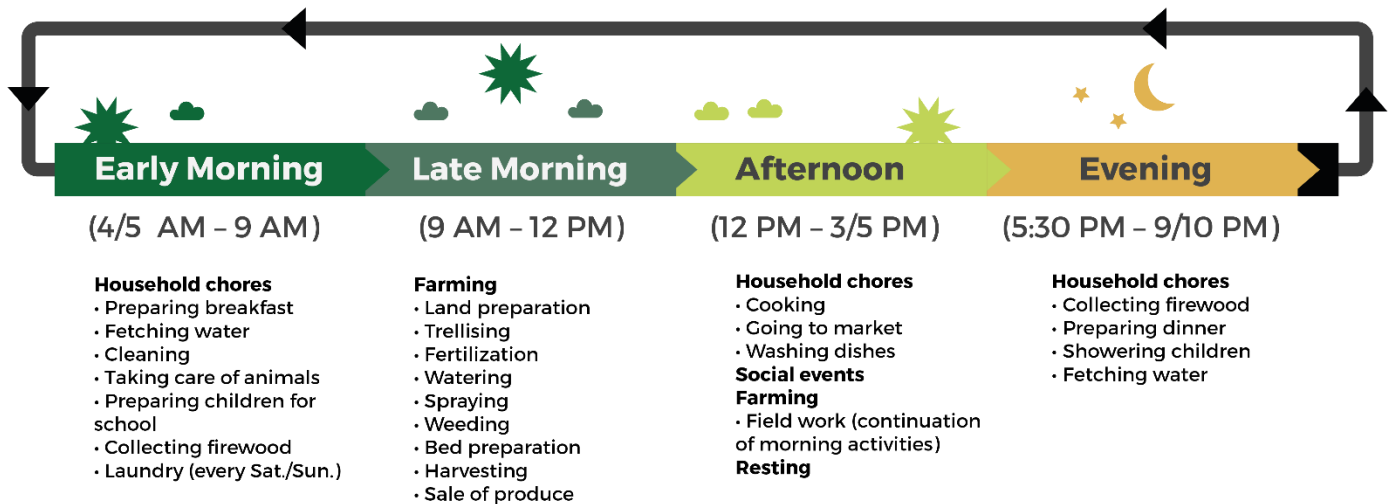
Tanzania

The women farmers in the FGDs (5 women-only FGDs and 2 mixed FGDs) were reported to be engaged in both commercial vegetable production and home gardens. The women farmers started their day quite early, ranging from 4 AM to 5 AM, and engaged in almost all the activities listed above. It was found in all the FGDs that women undertake all the household chores, including taking care of the children, in addition to the tasks of vegetable production.

Figure 6 shows the approximate time engagement in various activities by the women farmers in a day. The figures in this section are based on the qualitative responses in

the FGDs. The time presented is not exact; the day is divided into 4 parts to better show the sequence of the tasks.

Figure 6. Allocation of tasks in a typical day for women farmers in Tanzania



All the women farmers in the Tanzania FGDs reported that they engage in household chores from the time that they get out of bed until 9 AM. They continuously engage in farming activities from around 9 AM until lunchtime, which leads to a very tight schedule in their daily lives. The women farmers reengage in household chores at lunchtime, doing cooking, fetching water, and going to the market, etc., from 12 PM to 3 PM. If there is still unfinished work to be done for farming, the women go back to the farm and do farming work from around 3 PM until around 5 PM in the evening.

In 3 FGDs, the women farmers reported that they take a short rest after lunch. In the evening, after coming back from the second round of farming activities, the women change their mode of engagement from farming to household chores again, with activities like cooking, collecting firewood, fetching water, and showering children. It was mentioned in 2 FGDs that water sources are around 2 km from their homes. It was not observed in the responses of any FGDs that women farmers spend time chatting, going out with neighbors, or drinking coffee/tea, except when resting. In contrast, it was noted from the FGDs that men do have a social bonding time, like joining friends for coffee or local brew.

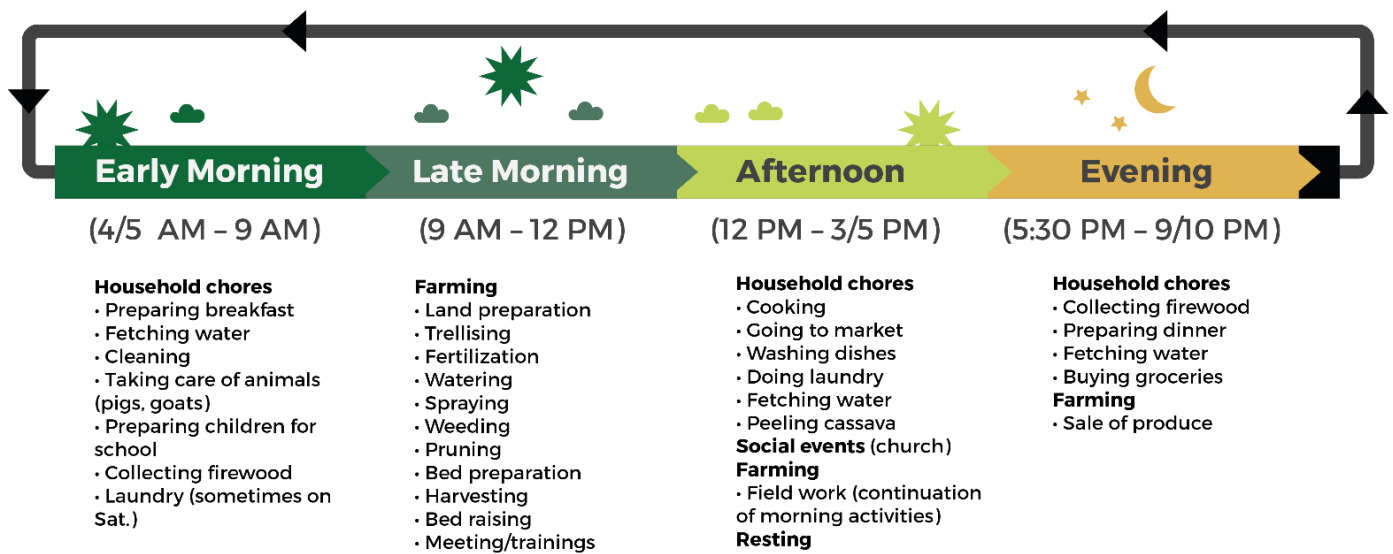
There are some previous studies to support the findings of the FGDs. For example, ACIDI/VOCA, as part of its Feed the Future Tanzania NAFKA II Activity, conducted a [time diary activity](#) to improve household time management and identify gender gaps in Tanzania. The time diaries showed an inequity in household time allocation and revealed that, on average, female household heads worked 2 to 3 more hours per day than male household heads and that 47% of women were considered “time-poor,” defined as working more than 12 hours per day.

Women spent 60% of their time on domestic work, while men spent only 27% of their time on domestic activities.

Uganda

Women farmers in Uganda have a very similar daily time allocation of tasks as women farmers in Tanzania. Most of the household chores are handled by the women, in addition to their engagement in farming. In one men-only FGD, the following response was given in regard to men's relative use of time: "Some farmers who come back from the field have their bath and go out for leisure to the nearby trading centers for hard drinks for those [that] take them, also soft drinks, also to watch football, cinemas, dramas . . . Some farmers also, on coming back from the evening garden work, rest with their family's home." In the other men-only FGD, the men recognized that women farmers have a very tight daily schedule, expressed through comments like "Men attend because they have much time compared to women." The following figure shows the time allocation and tasks that women farmers in Uganda perform on a daily basis.

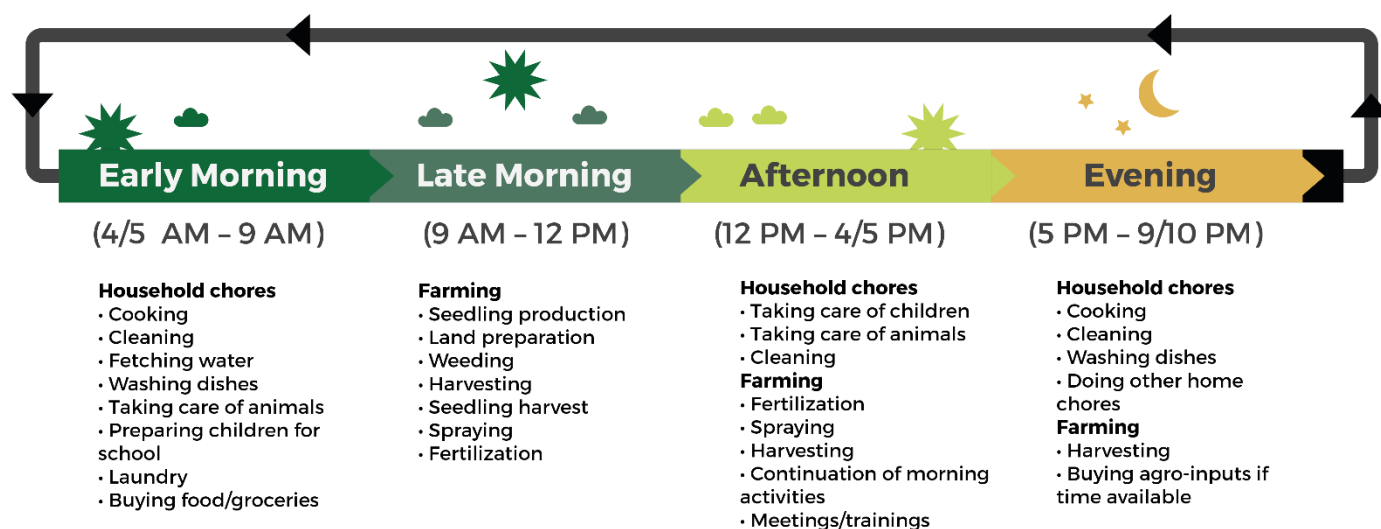
Figure 7. Allocation of tasks in a typical day for women farmers in Uganda



India

The women farmers in all 8 women-only FGDs engaged in both commercial vegetable production and gardens for home consumption. The typical day for women farmers in India follows a similar pattern of time allocation for engaging in household chores and farming activities. The time that women farmers were engaged in farming activities was reported to be around 4 to 6 hours in all but 1 FGD; the women in that FGD reported spending around 2 hours in farming activities.

Figure 8. Allocation of tasks in a typical day for women farmers in India

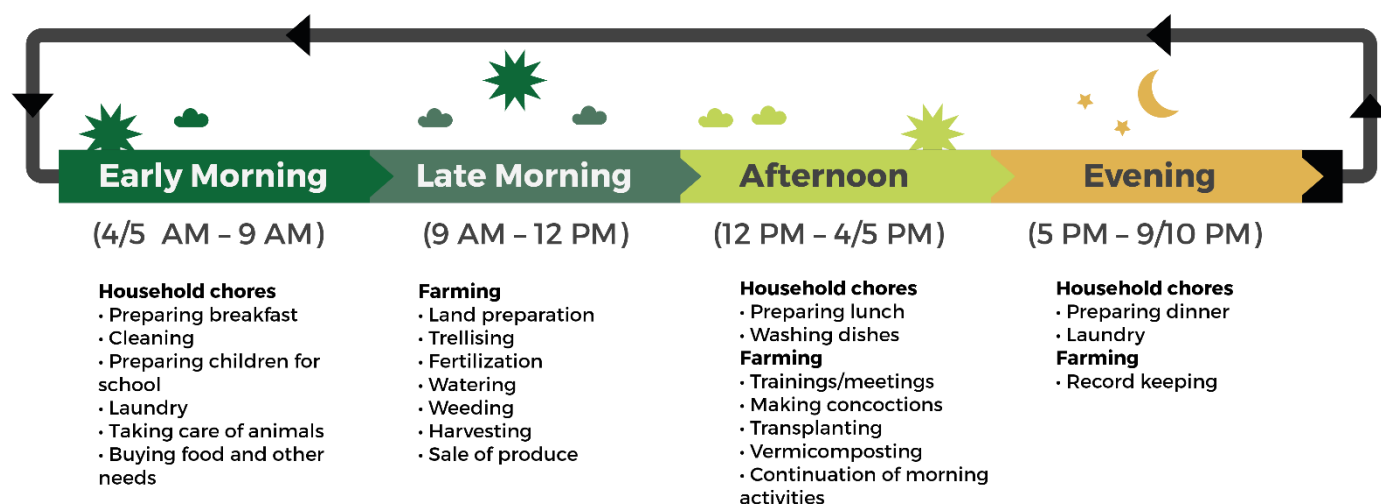


Philippines

In the case of women farmers in the Philippines, unlike the other countries in the study, engagement of men was observed in performing farm and household chores. In all FGDs, men were found to be involved in supporting women farmers with chores such as cooking, cleaning the house, taking care of young children, and fetching water. Fetching water was mentioned as a task that men do in all the FGDs.

The days of women farmers usually start early, at around 4–5 AM. However, the men’s engagement in household chores makes the burden and workload much lighter for the women. For the farming activities, in all FGDs, both men and women were found to engage together in activities such as transplanting, harvesting, fertilization, and taking care of animals, etc.

Figure 9. Allocation of tasks in a typical day for women farmers in the Philippines



Annex 1 provides a summary of the daily activities that women farmers across the 4 different countries engage in.

Decision-making power of women farmers in vegetable production

In this section, the following questions are addressed:

- What decision-making control do women have on crop management in vegetable farming (home gardening and commercial)? Overall, and then specifically on the following activities: crop choice, land preparation, seedling production, fertilization, pest and disease management, and harvesting.
- What control and decision-making power do women farmers have on cash flow management? Specifically, in buying agricultural inputs and getting money from the sale of the farm products.

Tanzania

According to the 5 women-only FGDs and the 2 mixed FGDs, women are usually the main decision makers for crop choice, crop management, harvesting, and sale of the crops in vegetable production. One mixed FGD indicated that women farmers are the decision makers for the vegetable production on their own plots and men farmers are the decision makers for the cereal crops on their plots. This is in line with what is often observed: women and men have separate plots and are therefore both decision makers within their own space. Often, women farmers seek advice from their partners, extension officers, and agro-input dealers to make these decisions.

In addition to those decisions, women farmers in all FGDs reported that they are in charge of deciding how to spend the profit from the sale of their produce and the overall financial management of the household. In one women-only FGD, it was stated that *"men are not trusted when it comes to money issues; they spend on local brews or other luxurious things,"* and women expressed the perception that men are not reliable in terms of financial management. In one mixed FGD, it was mentioned that *"women are the ones that keep money because they take care of the family for everything. In case the husband is earning a high income then he will focus on the big projects for the family, like a house, buying land, and operating shops."*

In the 1 men-only FGD and the 2 mixed FGDs, men mentioned that women are the ones who take care of saving money at cooperative/community banks or at home. Examples of such statements include *"Women are able to save money and place it in a village community bank. They always raise funds by doing labor in other farmers' fields or selling chicken or eggs; some have goats and pigs"* and *"Women save money by having a village cooperative bank that they serve little by little, and after a certain period of time they get the money for at least a year; others, they save at their homes."* Confirming the finding that married women farmers control their own earnings from vegetable production as well as participate in managing the finances of the

household, husbands in the FGDs recognized that women are good at managing the finances and that the men could even borrow money from the women.

Uganda

The responses in Uganda were more diverse in terms of the decision making of women farmers. In most FGDs, there was a common response about land inheritance and land entitlement: women generally do not inherit or hold title to land in Uganda; therefore, the decisions on usage of land were mostly with men. Regarding the family fields, out of 8 FGDs conducted, it was found in 4 FGDs that decision makers were mostly men in terms of crop choices, crop management, purchasing of agro-chemicals, sale of the crop, and control of earnings from vegetable production. But it was also noted that the decision power with regard to spending the profit from the harvest was partly with the women farmers. In one FGD, there was a response saying that "*money use is controlled by the husbands, but women are the treasurers and keep the money.*"

Women farmers in 2 women-only FGDs reported that women farmers are the decision makers for crop production and management on fields managed by a group. However, crop management needs to be discussed with the husband when a woman farmer is working together with her husband. In 1 women-only FGD and 1 mixed FGD, women farmers reported that they have the decision-making power on crop variety choices. Women farmers are only the sole decision makers in cases where they are single or widowed. The women pointed out that they need to give to their husbands a part of their earnings even from their own plot to get peace and support.

India

According to 7 FGDs, the tasks that women farmers are mostly responsible for are weeding and harvesting. In addition, it was found in 6 FGDs that women farmers make decisions for or are more responsible for how many vegetables to sell. In 5 FGDs, it was reported that the men make the decisions for farming activities, except for the activities mentioned above (weeding and harvesting). In their own plots, like home gardens, women are the decision makers on crop selection and crop management.

Regarding financial management, in 6 of the FGDs, it was observed that men are the ones making the decisions on how to spend income from vegetables. However, out of the 10 total FGDs, the responses in 2 FGDs indicated that decisions on how to spend income from vegetables are made by women farmers. A likely reason for this is that these 2 FGDs were conducted in a village where women were engaged only in home gardening.

In terms of making decisions on attending trainings, it was reported in 5 FGDs that men are the ones who decide whether the women participate in trainings. In 4 FGDs, it was recorded that both men and women farmers decide on attending meetings or trainings.

Philippines

In the Philippines, a more collaborative approach is taken towards making decisions at the farm and household levels. In some FGDs, it was found that decision making does not depend on gender but rather on who is more knowledgeable and has more information on crop production and management. In 6 of the 9 FGDs, crop management decisions such as crop choice, purchase of seeds and inputs, how much to sell, and how to spend crop sales were found to be jointly made by women farmers and their partners. It was found in all FGDs that women farmers control the household budget, including the income from vegetable production.

In terms of attending trainings, joint decisions were reported in 3 FGDs, and women farmers expressed that they are more passionate and interested in the trainings than their husbands are. In 5 FGDs, women farmers expressed that they are the decision makers for attending trainings.

Annex 2 summarizes the decision-making power of women farmers in each category.

Access to land, capital, inputs, and learning opportunities for women farmers

In this section, the following questions are addressed:

- What access do women farmers have to quality seeds and other agro-inputs? What access do they have to good advice and competitive prices?
- Do women who participated in EWS-KT activities observe changes and opportunities? What are they? How could changes and opportunities be improved/increased?

Tanzania

In 4 out of 8 FGDs, women indicated that they owned and inherited the land. There were also women farmers who rented land.

The FGDs found that women have access to seeds and agro-inputs. However, this access could be hindered by distance, as some markets and shops were 2.5 hours away from their villages. The interviews with successful women farmers indicated that access to inputs is one of the challenges that women farmers face, in terms of both distance and price.

Findings from all 8 FGDs indicate that the sources of information for women to make crop and agrochemical choices include agro-input dealers, extension officers/TFOs (EWS-KT technical field officers), partners, and neighbors (this was confirmed in Part 2 of the study, on women as IPM leaders). In all FGDs, it was revealed that agro-input dealers are a source of information. In addition, in 6 FGDs (5 women-only FGDs and 1 mixed FGD), it was found that women farmers or the person they commissioned visit the input dealers to purchase the required seeds and agrochemicals and to gather information. The women farmers could tour more than one agro-input dealer to find what they were looking for.

The women farmers mostly check the conditions of the market and do the harvesting of their crops. From FGD interviews, it can be clearly seen that women have access to market information for crop sales.

One interesting observation from the FGDs was that women farmers showed saving behavior by saving money in village cooperative banks, through savings groups, and at home. These savings could be built up over many years as capital for further investment in their lives. Saving money was also mentioned as a key factor in individual interviews with successful women farmers. These savings could be a way for women to overcome the limited access to capital to invest more in farming.

Specifics regarding the timing of meetings and trainings with women as the target audience were mentioned in 1 women-only FGD and 1 mixed FGD. FGD participants indicated that it is better to schedule a meeting or training around 10 AM or 2 PM, before they engage with other activities; once a meeting is planned, they do not have a problem with the time. The data shows clearly that despite their busy schedules, women farmers want to engage in training and are eager for more knowledge.

Uganda

The responses from FGDs show a clear association between the ownership of land and decision-making power in both crop and financial management. The findings from all FGDs indicate that women farmers do not have access to land ownership.

Some responses indicate saving behaviors by women farmers and easier access to loans due to the status of being vegetable farmers.

In terms of access to seeds and agrochemicals, some responses indicated that the women farmers rely on community farmer trainers or motorcycle taxi (boda-boda) drivers to procure the desired seeds and agrochemicals. In 4 FGDs, it was mentioned that mostly men procure the seeds and agrochemicals unless the inputs are for a group plot, in which case the women could buy them. If the inputs are for a plot in which the women farmer works together with her husband, she needs to discuss the crop management with her husband.

Women farmers in 2 FGDs indicated that they have access to training and learning opportunities; however, sometimes they need to ask for the consent of their husbands for attending a training. The men-only FGDs revealed that men mostly attend trainings because they have more free time compared to women; they send their wives when they are busy. These findings indicate that women farmers struggle to have access to trainings when the training is not specifically organized for women farmers.

There is not enough information to report on access to markets for women farmers in Uganda.

India

In the interviews with successful women farmers, key challenges mentioned were labor availability, finance (capital), marketing of the crop, and limited knowledge of new farming technology. Access to finance and training were also mentioned as areas in which women farmers would like to receive support. According to 7 FGDs, seed purchases and crop choices were made by men farmers. In 2 FGDs, purchasing seeds was done by women farmers, whereas the decision on crop choice was made by men farmers. In general, the decision making on crop management was done by men.

Philippines

Most of the farmers who participated in the FGDs indicated that they own land.

In all FGDs, it was observed that women farmers have access to crop market information, as both husband and wife are involved in communication and negotiation with traders and buyers.

It was found in 5 FGDs that women farmers are the decision makers for attending trainings/meetings, and they expressed desire for and interest in participating in training sessions and meetings. According to 3 FGDs, decisions on attending trainings are made jointly between women farmers and their partners. Therefore, in 8 of the 9 FGDs conducted, it was observed that women farmers have access to training and learning opportunities.

Annex 3 provides an overview of the key findings on women farmers' access to land, capital, inputs, and learning opportunities.

Women farmers' perspective on being women farmers

Tanzania

In almost all FGDs, the women farmers described that they felt very proud to be farmers and to be engaged in vegetable production. They get recognition and respect from both neighbors/friends and family members, especially from their husbands. They feel like champions and role models for young adults; young adults approach them to seek advice. Another noteworthy response from many in the FGDs was that the women farmers would like their children to inherit the status of being a farmer.

Uganda

In 1 FGD, it was indicated that due to the success that women farmers have with vegetable farming, they have better access to loans. The women farmers in the FGDs have become points of reference for other people, and social networks and friendships have been created. There was a noteworthy response indicating a reduction in gender-based violence at home after becoming women vegetable farmers. In some FGDs, no scarcity of food and hunger reduction were also benefits mentioned by women farmers growing vegetables. Women farmers reported that they are more confident and independent and are able to pay some house expenses and school fees, and some

reported that they are able to save money.

In the individual interviews with successful women farmers, the farmers also stated that their households had a balanced diet after they began to engage in vegetable production.

India

Findings include that being women farmers engaged in vegetable production has enabled the women to become more independent. The women farmers mentioned that they have access to resources (money, inputs, materials, and knowledge). They have also received recognition from the community and have been approached to provide advice.

Philippines

Women farmers reported feeling that they are business entrepreneurs. They can show the community that engaging in farming means that women are able to support their families with increased income and become independent of their husbands' income. They have obtained food security in their households: "*Woman farmer means we have a big role in food security*" was one statement. One telling quote from an interview with a successful women farmer was "*Women farmer means equal value with men and empowerment for women.*"

Women farmers in the Philippines expressed that with the support of EWS-KT and EWS, they have become more knowledgeable in crop, pest, and disease management. Some of their farms are now Good Agricultural Practices (GAP) certified as a result of participating in EWS-KT projects.

Part 2: Key Findings on Women as IPM Leaders

While Part 2 of the study focused on women as integrated pest management leaders, it also gathered contextual information, such as what crops women farmers grow in the 4 countries studied. Crop information is summarized in Table 3, with the most-grown crops presented first. From the table, it can be seen that women farmers are highly engaged in growing leafy vegetables across all 4 countries.

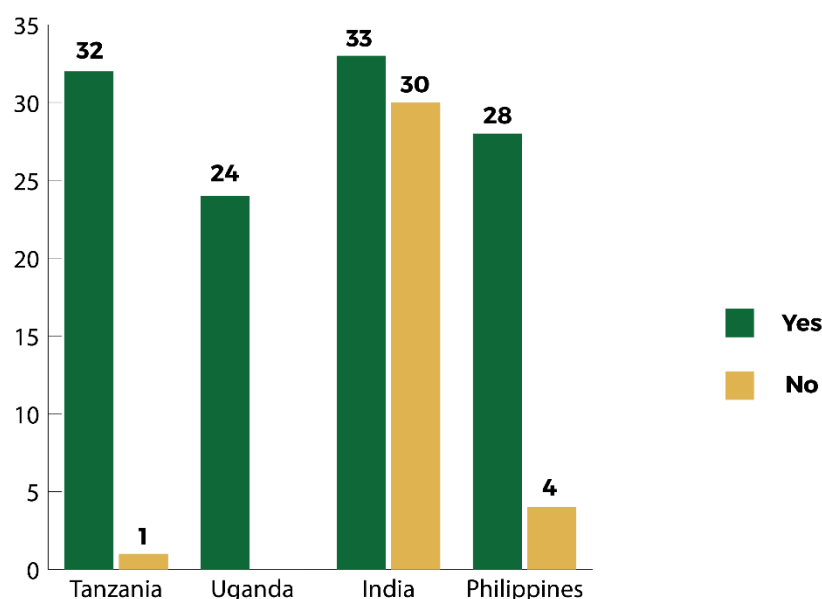
Table 3. Crops that women farmers grow in the 4 selected countries (in order of highest prevalence to lowest)

Tanzania	Uganda	Philippines	India
<ul style="list-style-type: none"> • Leafy vegetables • Root and bulb vegetables (e.g., sweet potato, cassava, carrot, onion, garlic) • Maize • Rice 	<ul style="list-style-type: none"> • Fruity vegetables (tomato, watermelon, eggplant) • Leafy vegetables • Maize • Root and bulb vegetables (e.g., sweet potato, cassava, carrot, onion, garlic) • Other (such as tobacco, banana) 	<ul style="list-style-type: none"> • Leafy vegetables • Maize • Root and bulb vegetables (e.g., sweet potato, cassava, carrot, onion, garlic) 	<ul style="list-style-type: none"> • Leafy vegetables • Rice • Maize • Root and bulb vegetables • Other grains

Activities of women farmers in pest and disease management

In Tanzania, 32 out of 33 women respondents were involved in pest and disease management. In Uganda, all 24 respondents were involved in pest and disease management. In India, 33 of the 63 respondents indicated that they were involved in pest and disease management; however, this result should be viewed with caution due to a misinterpretation of the question by the enumerators. In the Philippines, 28 of the 32 respondents were involved in pest and disease management.

Figure 10. Women farmers' involvement in pest and disease management, by country



In the study, the women were asked what they considered their role in pest and disease management to be. Below is a summary of the responses:

- Scouting pests and diseases and removing diseased plants
- Maintaining field hygiene; e.g., regular weeding, pruning
- Spraying
- Buying pesticides
- Good land preparation (early planting, soil sterilization before sowing)

Women’s engagement in tasks specifically related to pesticide management is summarized in Table 4.

Table 4. Percentage of women farmers involved in specific activities related to pesticides. (Only the responses from the women who answered Yes to being involved with pest and disease management are included.)

Activities Related to Pesticides	Tanzania	Uganda	Philippines	India
Decisions on where, what, and how much chemical pesticide to purchase	66%	13%	64%	24%
Actual purchase of chemical pesticides/fungicides	63%	13%	71%	6%
Decisions on when, what, and/or how much chemical pesticides/fungicides to use	59%	13%	54%	39%
Preparing and mixing chemical pesticides	53%	8%	25%	15%
Applying/spraying chemical pesticides/fungicides	50%	8%	25%	33%
Cleaning up/disposing of chemical pesticide containers or equipment once used	84%	67%	43%	24%
Washing/cleaning chemical pesticide-contaminated clothing	91%	83%	75%	21%
Purchase, preparation, use, and/or disposal of biopesticides	9%	13%	50%	24%

In Tanzania, washing/cleaning chemical pesticide-contaminated clothing was the activity with the most participation by the women farmers (91%), followed by cleaning up/disposing of chemical pesticide containers or equipment once used (84%). Furthermore, 66% of women farmers engaged in making decisions on where, what, and how much chemical pesticide to purchase, and 63% conducted the actual purchase of chemical pesticides/fungicides. This data supports the finding from the FGDs that women farmers in Tanzania are the decision makers for crop management.

High engagement by women farmers in activities related to pesticides can also be seen in Uganda. The activity with the highest engagement by women farmers in Uganda was washing/cleaning chemical pesticide-contaminated clothing (83%), followed by

cleaning up/disposing of chemical pesticide containers or equipment once used (67%).

In India, the highest engagement activity (39%) for women farmers was decisions on when, what, and/or how much chemical pesticides/fungicides to use. The second-highest activity (33%) was applying/spraying chemical pesticides/fungicides. This is somewhat contradictory to the findings from the FGDs. This data should be viewed with caution, as the data was collected by a third party in India and there may have been some misunderstanding about the questionnaire.

In the Philippines, women farmers' highest engagement was in washing/cleaning chemical pesticide-contaminated clothing (75%) and the actual purchase of chemical pesticides/fungicides (71%). The findings here corroborate the findings of the FGDs. Spraying pesticides/fungicides is one of the activities with the least engagement (25%), and women farmers in the FGDs also reported not engaging in spraying activities. In addition, it was found in all FGDs that women farmers often engage in the purchase of agro-inputs, supporting the actual purchase of chemical pesticides/fungicides as the second-highest engagement activity. A considerably high level of engagement (50%) is also seen in the purchase, preparation, use, and/or disposal of biopesticides.

Access to information on pest and disease management

The ways in which women farmers in all 4 countries acquire information regarding pest and disease management are presented in Table 5. The source of information most used by women farmers is neighbor/friend in Tanzania, Uganda, and the Philippines (97%, 44%, and 42%, respectively) and input dealer in India (92%). The other sources of information that show high engagement from women farmers are local agricultural extensionists, input dealers, and local farmer organizations. The sources presented here can be taken into consideration when planning trainings, meetings, and other activities.

Table 5. Access to information on pest and disease management by women farmers

Information Source	Tanzania	Uganda	Philippines	India
Government official information site	0%	0%	21%	8%
NGO officers	3%	0%	0%	0%
EWS-KT and EWS extension officers	6%	0%	33%	0%
Plant doctor service	15%	0%	9%	8%
Buyer	18%	6%	7%	16%
Local farmer organization	6%	13%	30%	49%
Input dealer	79%	16%	37%	92%
Local agricultural extensionists	52%	41%	33%	8%
Partner	61%	34%	23%	41%
Neighbor/friend	97%	44%	42%	65%
Others	0%	16%	23%	29%

Access to technology

Women farmers' access to a mobile phone was also analyzed in the 4 countries to gain insight on women farmers having the resources to obtain information from digital sources and platforms such as YouTube and Facebook. The findings are summarized in Table 6.

Table 6. Access to a mobile phone by women farmers, by country

Access to a Mobile Phone	Tanzania	Uganda	Philippines	India
No access	8	2	1	0
I have my own smartphone	3	7	9	11
I have my own smartphone and I have access to the internet	0	0	21	11
I have my own phone, but it is not a smartphone	22	6	0	18
A family member in my household has a smartphone. I can use it, but it is not mine.	0	10	1	23

In Tanzania, 22 women farmers out of 33 (67%) owned a mobile phone but not a smartphone, and 8 women farmers did not have access to a mobile phone. In Uganda and India, 10 women farmers and 23 women farmers, respectively, had access to smartphones owned by a family member. In the Philippines, 21 women farmers out of 32 (66%) owned a smartphone and had access to the internet. These findings can inform EWS-KT activities that aim to promote digitalization and the use of mobile apps for knowledge transfer activities.

Examples of technology that would make growing and selling crops easier

In the study, respondents were asked to give examples of technology that would make crop growing and selling easier. The purpose was to see whether the respondents were familiar with technology and to provide some considerations regarding activities that include trending technology. Respondents could provide more than one example of technology. The responses are presented in Figure 11.

In Tanzania, the respondents provided examples like machinery (such as tractors, water pumps, harvesting machines) and mobile apps.

In Uganda, crop solutions (51% of responses) and mobile apps (43% of responses) were the main examples given by the respondents.

In India, 40% of responses were examples of machinery and 37% of responses were

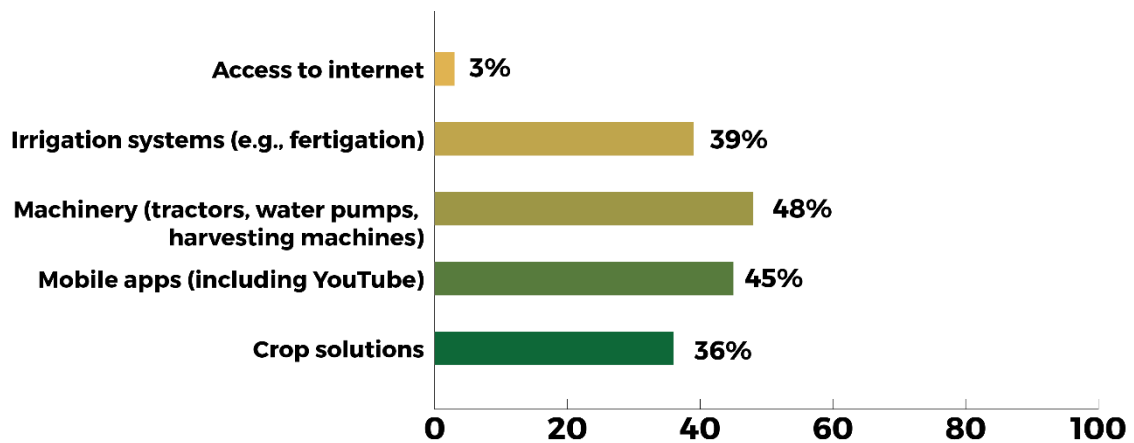
crop solutions.

In the Philippines, most examples provided were of machinery (56% of responses), followed by mobile apps (28% of responses).

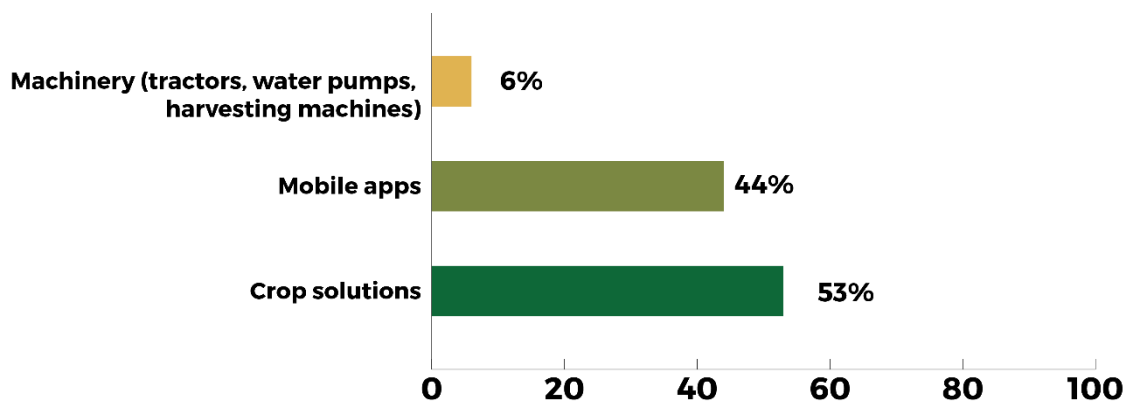
Across all 4 countries, respondents were familiar with mobile applications and crop solutions, indicating a good base for EWS-KT to incorporate or expand digitalization in some activities.

Figure 11. Percentage of respondents in each country who mentioned examples of technology in various categories that would make growing and selling crops easier. Respondents could provide more than one example.

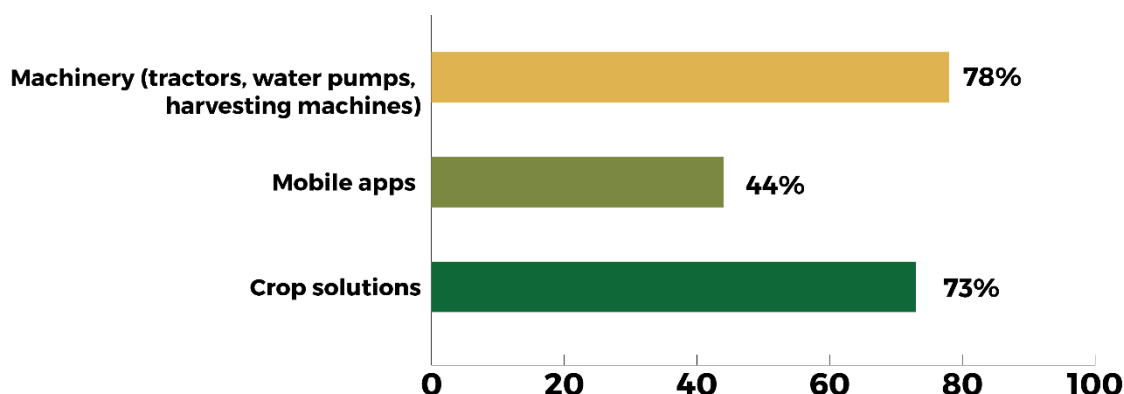
Tanzania



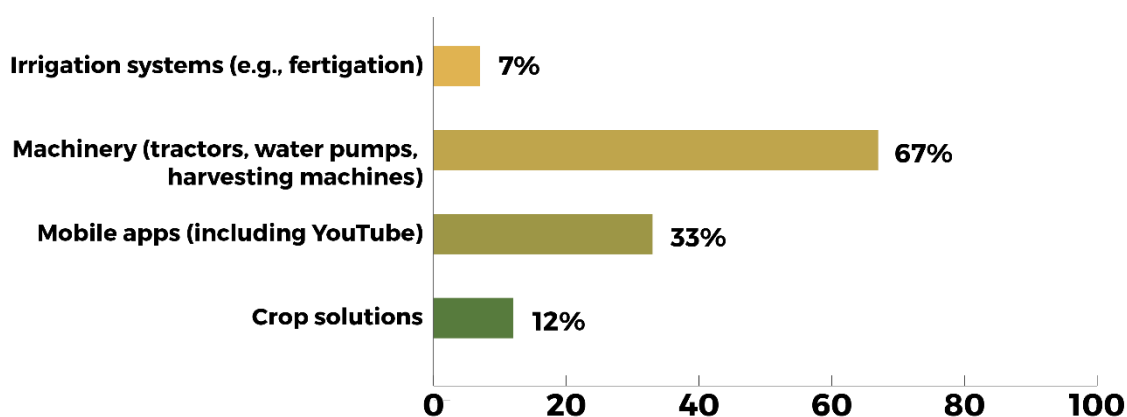
Uganda



India



Philippines

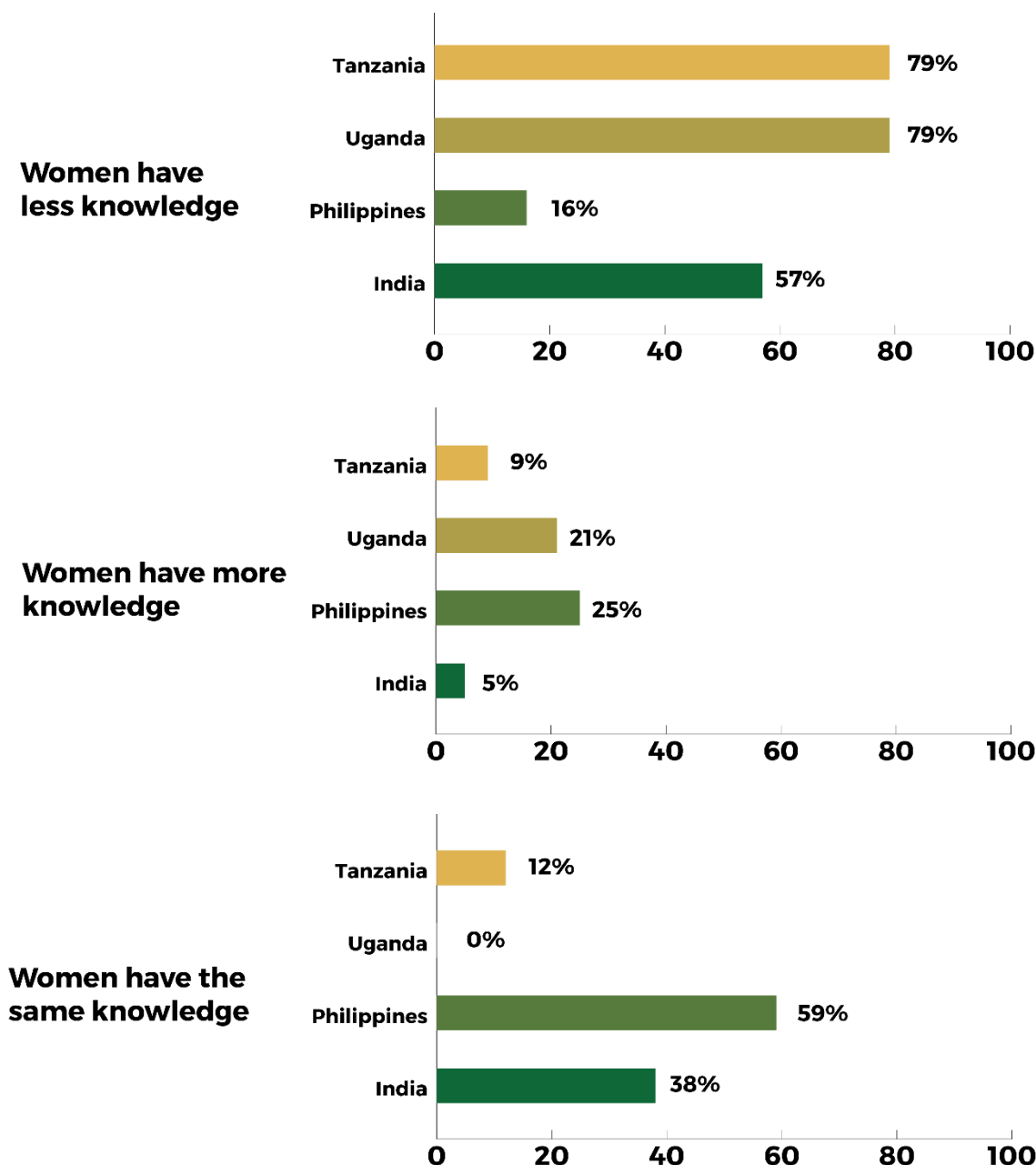


Women farmers' perceptions of women farmers' knowledge of pest and disease management

Women farmers' perceptions about women farmers' knowledge regarding pest and disease management were also collected, in order to inform EWS-KT about how women farmers view women as IPM leaders.

Of the 152 women farmers surveyed, 86 felt that women farmers have less knowledge than men farmers. Only 47 women farmers thought that women have the same knowledge as men, and only 19 women farmers thought that women farmers have more knowledge than men farmers. Those who felt that women farmers have more knowledge than men farmers came mainly from the Philippines and Uganda. This finding indicates the need to encourage and promote women farmers' confidence in pest and disease management through more awareness raising, training, and coaching.

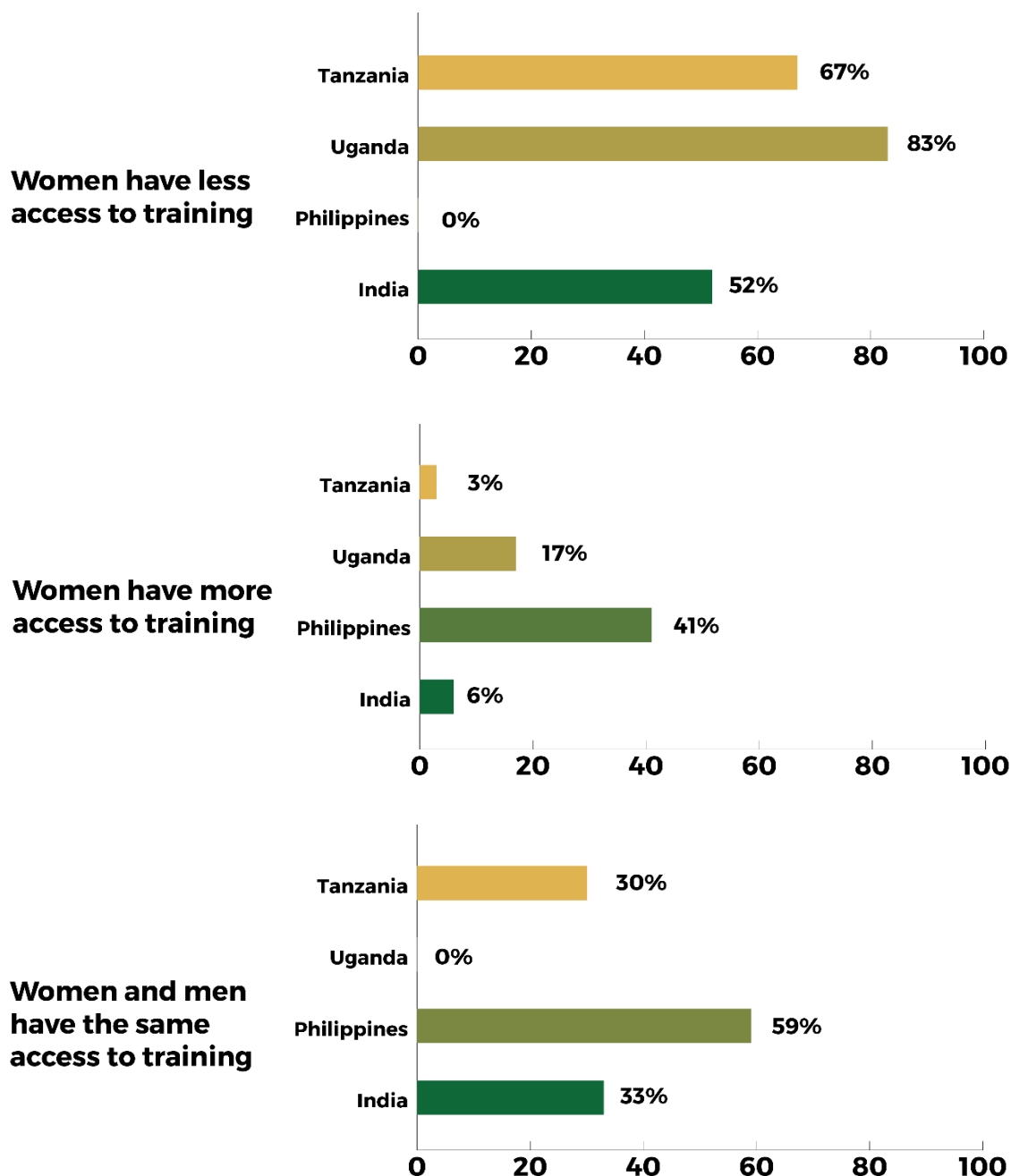
Figure 12. Percentage of women farmers from each country who perceive women farmers' knowledge of pest and disease management as less than, equal to, or more than men farmers' knowledge.



Women farmers' perceptions of access to trainings

Of the 152 women farmers in the survey, 79 thought that women farmers receive less access to training than men, and 50 felt that women farmers receive the same access to training. Only 22 women farmers perceived that women have more access to training; these responses came overwhelmingly from the Philippines. These findings will be food for thought in considering how EWS-KT can include more women farmers in its activities and provide more access to training for women.

Figure 13. Percentage of women farmers from each country who perceive women farmers' access to trainings/meetings as less than, equal to, or more than men farmers' access.



Women farmers' expectations if women farmers become leaders in pest and disease management

Tanzania

The responses from women farmers in Tanzania regarding the expected changes if women farmers take a leadership role in pest and disease management in the community are as follows:

1. Productivity, yield, and quality will improve

2. Women will become more confident in agriculture, and more women will get involved in farming
3. Spread of pests and diseases will be more easily controlled
4. Sale of farming products will increase, and therefore income for the household will increase
5. Effective and safe use of pesticides

Uganda

Women farmers in Uganda provided the following responses:

1. Household nutrition will improve
2. Women can get engaged in commercial and large-scale production
3. More involvement of young women and single mothers
4. More people (both genders) will be interested in becoming vegetable farmers, since women farmers are very committed

India

In India, the following expected changes were reported:

1. Women will be a good inspiration for other farmers to follow (because of their improved pest and disease management practices)
2. Women farmers who are leaders in pest and disease management could be a huge support for training other farmers in the community.

Philippines

Responses from women farmers in the Philippines are as follows:

1. Women farmers are very organized
2. Women farmers are very well informed and good at explaining
3. Women farmers are very respectful and will support equal rights/opportunities for women in all aspects

More details are provided in Annex 4.

Challenges and Opportunities of Successful Women Farmers

Below is a summary of the key challenges and opportunities that were mentioned in interviews with successful women farmers in each of the 4 selected countries.

Table 7. Summary of challenges and opportunities experienced by successful women farmers

Country	Challenges	Opportunities
Tanzania	<ul style="list-style-type: none"> • Limited time to come to trainings • Inputs (high price and distance) • Capital • Knowledge on pest and disease management • Land • Labor 	<ul style="list-style-type: none"> • Trainings to gain knowledge and technology know-how • Existence of institutions like community banks • Higher profit in short duration • Gender awareness training
Uganda	<ul style="list-style-type: none"> • Limited time to come to trainings and dependence on men's decisions to participate in trainings • Inputs (high price) • Capital • Knowledge on pest and disease management • Market and transportation • Labor • Climate change • Land 	<ul style="list-style-type: none"> • Trainings to gain knowledge and technology know-how • Microfinance institution availability • Higher profit in short duration • Food security • Gender awareness training • Advocacy for land access
India	<ul style="list-style-type: none"> • Dependence on men's decisions to participate in trainings • Knowledge on pest and disease management • Marketing of the produce • Capital • Labor 	<ul style="list-style-type: none"> • Trainings to gain knowledge and technology know-how • Higher profit in short duration • Regular flow of income • Gender awareness training; sharing work within families
Philippines	<ul style="list-style-type: none"> • Knowledge on pest and disease management • Marketing of the produce • Capital 	<ul style="list-style-type: none"> • Food security in the household • Food safety in the household

Conclusion

The findings from this study cover 2 main areas.

The first part of the study looked at **women's engagement in vegetable production**.

1. The collected data provides insight into the typical day of women farmers in the 4 selected countries. The findings signal that there is a need to (re)allocate household tasks between men and women farmers in order for women farmers to have more personal time. It also informs EWS-KT staff of better timing to engage with women farmers.
2. The findings indicate that there is room for improvement regarding women farmers' access to resources and decision making.
3. The findings indicate that women farmers and communities have a positive image of women farmers growing vegetables. This is a great opportunity to further empower women farmers and young people who are not yet engaged in vegetable farming.
4. The interviews with successful women farmers pointed out major challenges and opportunities of being a women farmer. Most of the challenges found in the study were common across the 4 countries.

The second part of the study explored **women as IPM leaders**.

1. The study provides insight into the role women are taking in pest and disease control. It confirms that women farmers play a role in pest and disease management, such as scouting pests and diseases and removing diseased plants, purchasing and choosing chemicals, and maintaining field hygiene through activities like weeding and spraying.
2. The collected data offers an overview of the activities that women farmers are engaged in regarding pesticides. Washing/cleaning chemical pesticide-contaminated clothing, cleaning up/disposing of chemical pesticide containers or equipment once used, and actual purchase of chemical pesticides/fungicides were found to be the activities most engaged in by women farmers across the countries.
3. The findings show that women farmers engage mostly with their neighbors/friends as their source of farming knowledge in Tanzania, Uganda, and the Philippines. In India, the women farmers consult the agro-input dealer.
4. The study provides insight into women farmers' access to mobile phones. In addition, the study shows that the respondents are familiar with mobile applications, which indicates that there is a good base for EWS-KT to consider (more) digital solutions.
5. The findings show that, considering women farmers' level of confidence and their access to training, there is room for more encouragement and empowerment activities for women farmers.

Recommendations

Vegetable production:

1. Promote a positive attitude/culture about farming to a wider audience
Since vegetable farming is positively perceived in some communities (Tanzania is a good example), there is an opportunity for setting up initiatives to promote vegetable farming among young adults, especially young women.

Access to knowledge, quality inputs, and finance:

1. Organize training sessions for women farmers
The findings on access to training and on women farmers' perceptions of women's knowledge on pest and disease management indicate a need to organize more meetings and technical training sessions specifically targeting women farmers. These sessions should be timed to take into account the busy schedules of women farmers. Furthermore, they should not be limited to technical topics but should also cover topics such as financial management, women's empowerment, leadership, and communication.
After checking the demographic data, and in consultation with knowledge transfer officers in each country, a target percentage for women farmers' participation should be set locally. The targets should be aligned with EWS-KT's overall pledge to reach 50% women farmers in its activities.
2. Support access to agricultural inputs for women
Since one of the challenges that women farmers face is access to inputs, continue to catalyze a robust market value chain (through greater demand for quality inputs) in order to increase the number of agro-input dealers in close proximity to farming communities.
3. Improve outreach to women farmers through agro-input dealers' shops
This is not only about purchasing appropriate agrochemicals and seeds but also about using agro-input shops as a hub for regular contact to ensure information exchange with women farmers. The shops could be used to improve access to information and quality inputs for more and more women.
4. Link existing community and financial structures to access to inputs and other services
Following the example of Tanzania, where most of the women farmers save money in village cooperative banks, it would be helpful if access to inputs and other services could be linked to the same institutions that women farmers are already using. Through savings banks, for example, farmers could invest part of their capital in procuring seeds. Also, monthly meetings of cooperative banks or women's groups could be used to organize training sessions.

5. Ensure safe handling of chemicals, especially around children
It was observed in some FGDs that children are supporting and engaging in farming and home gardening activities. It is of utmost importance that training sessions on vegetable production cover safe handling of chemicals. In addition, knowledge transfer officers should be on the alert for child labor.

Gender awareness and gender approach:

1. Provide advocacy trainings on the role of women and gender awareness
Since 1 FGD in Uganda and most FGDs in India found that women farmers need to ask consent from their husbands to join a training, providing advocacy training on women's empowerment to the men and the community is suggested. Currently, prioritization of women farmers to join a training is often low when the training does not specifically target women farmers.
2. Increase awareness on time allocation
A time diary exercise initiative could help men and women farmers to be more aware of household time allocation and create a personal space for women farmers.
3. Implement gender-sensitive monitoring and evaluation
Regular monitoring and reviewing of past activities through the lens of gender will help the teams evaluate whether activities address the different priorities and needs of women and men farmers, and identify areas and ideas for improvement.
4. Upgrade the training content from the perspective of women farmers
In addition to organizing the women farmers' training sessions and gender awareness training, a review of the technical training materials that EWS-KT staff are utilizing is suggested. EWS-KT can then upgrade the content to ensure that women farmers can easily understand it, taking into account women farmers' knowledge level in each specific location of each country.

Further research

This study was not scientific research; rather, it was a conversation with farmers. Many topics addressed in this study require further, more academic research.

Follow-on research could focus on topics such as

- Women farmers' contribution from vegetable production sales to the household budget, family nutrition, and education
- Factors affecting the decisions of women and men farmers when choosing a seed brand, etc.
- Policies that would bring the quickest benefit to women farmers in a specific country or state

- Breeding seeds specifically for women farmers, including what vegetables and varieties women farmers prefer

What's next?

To better adapt the services provided by EWS and EWS-KT to women farmers, awareness and work within these entities are needed. Awareness and action can go hand in hand; already, the direct participation in the study by staff has increased awareness and resulted in some concrete steps, such as small-group training and better timing for training events.

Next steps:

1. Communicate the results of the study across EWS and EWS-KT – organize a 2023 campaign presenting the results of the study and the insights from the interviewees; raise awareness, interest, and dynamic change.
2. Assess EWS and EWS-KT on gender, and act upon the results.
3. Pilot gender balance teams in the EWS Sales & Marketing department. Identify what type of working environment is needed to have more women on the Sales & Marketing team, working with farmers. Learn from experience.
4. Present a catalog with seed varieties for women.
5. Continue to fill knowledge and communication gaps with women farmers. Assess existing packaging, extension and training materials, and communication channels. Evaluate the needs of women farmers in each context, tailoring programs accordingly.
6. Bring the study to other countries where EWS and EWS-KT are present, integrating recommendations from the first phase.

This study is a starting point that highlights the need to carefully consider gender in extension activities to increase outreach to women farmers, providing them with the knowledge and access to resources to reach their potential. To create more impact, collaboration with other organizations is needed. Their knowledge and experience can help to create positive changes at the family, community, and country levels.

The women farmers who participated in this study showed that even with limited knowledge and resources, they can increase their income and support their families. Imagine what they could do if they had more time and access to knowledge and resources.

Annexes

Annex 1: Overview of women farmers' activities

Table 1A: Overview of the activities of women farmer participants in FGDs, by country

Country	Activities in the morning	Activities in the afternoon	Activities in the evening
Tanzania	Household chores	Household chores	Household chores
	Preparing breakfast	Preparing lunch	Collecting firewood (once per week or depends on requirements)
	Fetching water	Going to the market	Preparing dinner
	Cleaning	Washing dishes	Fetching water
	Taking care of animals	Resting	Showering children
	Preparing children for school	Funerals/meetings (social events)	
	Collecting firewood	Laundry (if not done in the morning)	
	Laundry (reported to do every Saturday/Sunday)		
	Farming	Farming	
	Land preparation	Continuing work from the morning	
	Trellising		
	Fertilization		
	Watering		
	Spraying		
	Weeding		
	Bed preparation		
	Harvesting		
Sale of produce			
Uganda	Household chores	Household chores	Household chores
	Preparing breakfast	Preparing lunch	Collecting firewood
	Fetching water	Washing dishes	Preparing dinner
	Cleaning	Peeling cassava	Fetching water
	Taking care of animals	Fetching water	Buying groceries
	Preparing children for school	Resting	
	Collecting firewood	Social events (church)	
	Laundry (sometimes on Saturday)	Laundry (if not done in the morning)	
	Farming	Farming	Farming
	Land preparation	Continuing the morning activities	Going to the market and selling the produce
	Trellising	Going to the market and selling the produce	
Fertilization	Buying inputs (for the group plot)		

Country	Activities in the morning	Activities in the afternoon	Activities in the evening
Uganda (continued)	Watering		
	Weeding		
	Pruning		
	Harvesting		
	Bed raising		
	Meetings/trainings		
India	Household chores	Household chores	Household chores
	Cooking	Taking care of children	Cooking
	Cleaning	Taking care of animals	Cleaning
	Fetching water	Cleaning	Washing dishes
	Washing dishes		Doing home chores
	Taking care of animals		
	Preparing children for school		
	Laundry		
	Buying food/groceries		
	Farming	Farming	Farming
	Seedling production	Spraying	Harvesting
	Land preparation	Fertilization	Buying agro-inputs if time available
	Weeding	Weeding	
	Harvesting	Meetings/trainings	
	Seedling harvest		
Philippines	Household chores	Household chores	Household chores
	Preparing breakfast	Preparing lunch	Preparing dinner
	Cleaning	Washing dishes	Laundry
	Preparing children for school		
	Laundry		
	Taking care of animals		
	Buying food and other needs		
	Farming	Farming	Farming
	Land preparation	Trainings/meetings	Record keeping
	Trellising	Making concoctions	
	Fertilization	Transplanting	
	Watering	Vermicomposting	
	Weeding	Continuing morning activities	
	Harvesting		
	Sale of produce		

Table 1B: Crops that women farmer participants in the FGDs are growing

Country	Crops
Tanzania	Amaranth, spinach, cucumber, cabbage, African eggplant, tomato, broccoli, cauliflower, okra, banana, Chinese cabbage, carrot, African nightshade, sunflower (for seeds), watermelon, maize, bean
Uganda	Tomato, vegetables
Philippines	Pole bean, eggplant, okra, cucumber, tomato, squash, pechay and sweet corn, bitter gourd, hot pepper, onion, ampalaya, calabaza, watermelon, lemon, maize, rice

Note: Data not available for India.

Annex 2: Overview of decision-making power, by country

Decision-Making Area	Tanzania	Uganda	Philippines	India
Crop management in vegetable farming (home gardening and semi-commercial; crop choice, variety choice, pest and disease management, harvesting)	Women farmers are decision makers for all the crop management activities in all FGD responses.	In 4 FGDs, decision makers are mostly men in crop management. In 2 FGDs, women farmers jointly make the decisions on crop management with their husbands.	In 6 FGDs, women farmers and their husbands jointly make decisions.	In 5 FGDs, men farmers are the decision makers for all the crop management except harvesting and weeding. Both men and women farmers decide together in 1 FGD response.
Financial management (earnings from sale of the produce; household spending)	Women farmers have decision-making control on the sale of produce. They also do savings at village cooperative banks.	In 4 FGDs, men have decision-making control, with women only having the status of treasurers.	In all FGDs, women farmers are the financial controllers for both the sale of produce and the income of their husbands.	Men decide on how to spend the income from vegetables in 6 FGDs. Women farmers decide in 2 FGDs.
Sale of the produce (amount)	Women farmers are the decision makers in all FGDs.	Women farmers are the decision makers in 6 FGDs.	In all FGDs, women farmers decide jointly with their partners.	Women farmers are the decision makers in 6 FGDs. Men farmers are the decision makers in 2 FGDs.

Annex 3: Access to resources

	Tanzania	Uganda	Philippines	India
Land	Women farmers can inherit the land entitlement and own the land. (4 FGDs)	Women farmers generally do not inherit the land entitlement. Only men do. (All FGDs)	Out of 5 women-only FGDs, all women owned land in 4 FGDs. In the rest of the FGDs, at least 50% of the respondents in each FGD owned land.	Women farmers involved in the study do not have any limitations regarding accessing land. Women farmers do not claim access to land as a challenge that they have experienced.
Inputs	Women farmers go to agro-dealers and buy the required inputs (4 FGDs). Men go to agro-dealers (2 FGDs).	In 2 FGDs, women make the decisions for purchasing inputs and do the actual purchasing (women in those FGDs are working on group land). In 4 FGDs, men are the decision makers for the purchase of inputs.	In all FGDs, women farmers can be engaged in buying inputs and making decisions on input procurement.	In 7 FGDs, purchasing seeds and choosing crops are done by men farmers. In 2 FGDs, purchasing seeds is done by women farmers, whereas the decision on crop choice is done by men farmers.
Capital	In 5 FGDs, women save the money in village community banks (VICOBA).	In one FGD, women farmers have easier access to loans in the community.	–	Access to capital was addressed as one of the key challenges.
Learning opportunities (trainings and meetings)	Women farmers expressed a wish to get more knowledge on pest and disease management and other trainings (4 FGDs).	In 6 FGDs, men decide who will attend the trainings. In 2 women-only FGDs, women are the participants in the trainings. One specific response: Women farmers need to ask for the consent of their husbands for attending a training.	In 5 FGDs, women are the decision makers for attending trainings. In 2 men-only FGDs, men are the decision makers. In 3 FGDs, the consultation is made between women farmers and the partners.	In 5 FGDs, men are the decision makers. In 4 FGDs, both men and women decide.

Annex 4: Perception of women farmers on being leaders in pest and disease management

Country	Women's Perceived Impact as IPM leaders
Tanzania	<ul style="list-style-type: none"> ● Reduced effects of pests and diseases because women spend more time in the field. For example, men may be in charge of grazing the cattle the whole week. The man visits the field for a very short time in the morning, then takes the cattle for grazing. Women are the ones working in the field for a long time during that particular week. ● High yields, quality produce, and high returns. Also we will have community protocols on how to overcome pests and diseases by giving information to prevent high spread of disease and pests. ● More healthy crops because women do more activities in the field like weeding, watering, and harvesting, so that it is easier to diagnose and observe. ● More independent in farming because otherwise you have to wait until a man comes and it can be too late. ● Quality products, because women are mostly careful on inspection.
Uganda	<ul style="list-style-type: none"> ● Women are committed and give their best to do the right thing with strictness. Quality and quantity of crops will be realized with better markets. High motivation from other women to come and participate since they will be like examples. ● Women like to follow up on activities closely. They are also transparent in their dealings, don't waste time, and engage other women or friends to make sure they participate; women do close linkages for marketing of produce. ● Timely purchase of pesticides and fungicides, good quality of produce, and more women in vegetable production equipped with knowledge and money taken back to reinvest in production. ● Women are fast learners and they do regular monitoring of crops in the garden, making it easy for problems to be detected early for intervention and resulting in quality produce attained.
India	<ul style="list-style-type: none"> ● They will know the condition of the crop before the onset of disease or pest and will take care of it accordingly. ● Helping other women farmers by giving proper knowledge. They also use home remedies to control pests. ● They give more knowledge to other women.
Philippines	<ul style="list-style-type: none"> ● Women can relay information properly. They can give specific and detailed information that can be easily understood; men are typically shy. ● Women are very industrious, know how to give detailed recommendations, and are very patient. ● Women take good care of the plant, like they take good care of their family. ● Management of pests will be more detailed. And women farmers in the village will be more interested in training, especially in the management of insect pests.

Annex 5: Questionnaire for EWS-KT and EWS staff involved in the study about their experiences during data collection

1. Please tell me your name, age, position, and country of duty station.
2. How long have you been with EWS/EWS-KT?
3. Did you have experience in conducting a survey? If so, what type of survey – one-to-one interview/focus group discussions?
4. How did you feel when you heard that EWS-KT was going to conduct a survey and a study about women farmers? Are you interested in the findings or not?
5. How did you prepare for the surveys and interviews?
6. Did you get overwhelmed by the workload of the survey?
7. In regard to interviewing and talking with women farmers in focus group discussions, do you want to share any specific stories that are good for highlighting? Any recommendations towards the specific struggles that women farmers have in your country?
8. Did you have any insights that you experienced regarding the decision making of women farmers?
9. In terms of pest and disease management, chemical management, how is your thinking on the responses of women farmers in your country?
10. How was your overall feeling after you heard the findings of the survey?

Annex 6: Reflections from EWS-KT and EWS staff involved in the study

An online survey consisting of 10 qualitative questions was launched, and a brief follow-up discussion was organized to collect the reflections, insights, and stories that staff experienced during the data collection process for the study. 13 staff provided very helpful and interesting responses, summarized below.

- All the staff welcomed the study and mentioned that participating in the study created a learning opportunity for them about women farmers and their contributions.
- Staff observed the struggles of women farmers, such as issues of land ownership by women farmers and inheritance laws and traditions that hampered getting involved in farming.
- All the responses indicated that, in general, women farmers are very hardworking, passionate, and dedicated; are good managers; and are open to sharing experiences and learning new things.
- Participating in the interviews and FGDs for the study helped the staff to better understand the local context of women farmers and motivated them to undertake changes in their ways of working and their strategies for approaching and involving women farmers.
- Preparation of the work plan and study protocol, as well as training on the methodology tools, should be conducted prior to the study. Planning ahead was mentioned, as the farmers are very busy during harvest and it is difficult to schedule time for interviews and FGDs.

Recommended next steps based on staff reflections:

- A pilot project has been initiated by EWS India to involve more women professionals in the Sales & Marketing department.
- Conduct an internal study with all EWS and EWS-KT staff to identify the current awareness of gender and the gender situation in EWS and EWS-KT. This study will complement the women farmers study and help streamline interventions to benefit all women farmers. In 2019, EWS-KT initiated road maps aiming at increasing the number of women staff and women farmers in KT activities.
- Improve communication with women farmers. Assess extension and training materials and approaches and consider alternative communication channels to reach more women farmers.
- Define a strategy for training women farmers.
- Communicate continuously the results of the study; hold workshops and reflections at EWS and EWS-KT to continue raising awareness on gender and women farmers; and build a dynamic course of action designed to bring women forward within EWS, EWS-KT, and the farming communities.

Annex 7: Outputs from the Women Farmers Forward workshop

During the Women Farmers Forward workshop on October 25, 2022, the private sector acknowledged that there are enormous opportunities in the agricultural value chain if the full potential of women can be met and unlocked. The workshop's participants agreed that it would be important to emphasize the profitability (both for families and companies) of women's full engagement in the horticulture industry. A tailored approach is needed to provide the best services to women farmers so they become economically independent and are recognized within their community and the vegetable value chain as key economic players. The gender approach is highly contextual and requires gender awareness, flexibility, and a strong will to change within companies, foundations, organizations, and academia.

The following concrete ideas were brainstormed by the workshop participants, who were divided into 3 groups.

- Academia
 - Assess the situation with contextualized research before starting to work in one area
 - Bridge the knowledge gap for women farmers
 - Make findings translatable into policy
 - Undertake scenario studies – the world is changing, and the services should change with it
- Nongovernmental organizations

If you want to have lasting change for women, educate men:

 - Organize gender sensitivity trainings for women and men; hence, focus not only on technical training but also on life skills
 - Assess the current situation in regard to gender roles
 - Work with local organizations and institutions to create change
 - Work with gender champions – “first movers” who show how things can be done differently
- Private sector
 - Adopt adaptable company services that serve everyone
 - Ensure that extension services are well balanced in terms of gender
 - Hold gender sensitivity trainings for staff
 - Appoint female board members and other high-level decision makers
 - Use tailored packaging and messages to specifically reach female farmers
 - Set up women's networks to support female entrepreneurs

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