

Personal Connections: What Women in Sustainable Agriculture Value in Their Professional Development

Abstract

We designed a national sustainable agriculture conference for women farmers and agricultural professionals to provide a supportive environment in which participants felt comfortable to learn, share, contribute, question, network, and make connections affecting their personal and professional lives. Through postconference and later retrospective evaluations, we identified key concepts that Extension professionals and others hosting agricultural events may consider when engaging women participants. Women in sustainable agriculture may prioritize choosing a conference, and are more likely to participate fully, when it is women focused. Women appreciate hands-on experiences and learning from experts and peers but value most the opportunity to connect with other women in similar circumstances.

Keywords: [women in sustainable agriculture](#), [Extension conferences for women](#), [engaging women farmers](#), [professional development for women](#)

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Introduction

Many women find the sustainable agriculture community uniquely compatible with their identities as farmers and agricultural professionals (Trauger, 2004). A national conference organized by and for women is one way to bring farmers, Extension educators, service providers, and students from diverse backgrounds, geographic locations, agricultural sectors, and experiences together in an inclusive, celebratory, and educational environment to network, learn, share information, and be inspired by the work of others.

In 2005, what began as a 10th anniversary celebration of the University of Vermont Women's Agricultural Network coalesced into the first National Women in Sustainable Agriculture Conference. The conference has been held five times since its inception. Each event has attracted approximately 400 participants, primarily women, from across the nation and internationally. Host organizations have included University of Vermont Extension and Women's Agricultural Network; Pennsylvania Women's Agricultural Network in affiliation with

Pennsylvania State University; The Women, Food and Agriculture Network; and most recently, Oregon State University (OSU) Extension's Small Farms program.

We organized the 5th National Conference for Women in Sustainable Agriculture, held December 2016 in Portland, Oregon, with a planning team of 22 women representing farms, land-grant universities, Extension programs, nonprofit organizations, and state and federal agencies. Our theme was *"Making Connections Toward Resiliency,"* with the tagline "Sow, Grow, Reap, Repeat!"

We assumed that women attendees would prefer to attend a conference where peer learning and networking opportunities were emphasized (Trauger et al., 2008), and that they would be more likely to participate in discussions and ask questions with a primarily female lineup of presenters and fellow attendees (Brasier et al., 2009). A national call for proposals attracted women of various ages, experience levels, backgrounds, and involvement in diversified farming enterprises. We encouraged submissions for workshops or presentations that would be interactive and collaborative and that would address issues of inclusivity, resiliency, and resourcefulness. The variety of proposals we selected provided a powerful program of topics and educational delivery styles, from lecture and seminar presentations to hands-on workshops, roundtable talks, and panel discussions. This selection of sessions was complemented by exploratory tours, keynote addresses by nationally renowned speakers, social time, and networking activities.

We anticipated that conference participants would be highly interested in making new connections and deepening existing relationships while attending the conference (Long, Bullock Lamberts, & Quehm, 1980). Women often seek out opportunities in which they can relate to other women who share common identities (Donnellon & Langowitz, 2009). Women farmers and agricultural professionals are often isolated in their communities and crave connection with women peers (Kiernan, Barbercheck, Brasier, Sachs, & Terman, 2012), so we made networking sessions a priority in the schedule.

We arranged childcare for participants' children and worked with the conference hotel to provide meals prepared primarily with whole foods procured from local farmers and ranchers. We felt that these offerings would be important to the target audience. Conference organizers raised more than \$11,000 in grant funds and sponsorships to provide partial scholarships to attendees needing travel assistance. We expected that some participants would need financial assistance to be able to attend and that participants in general would appreciate attending a conference that was accessible to those with limited resources (Rivera & Corning, 1990).

Because we focused so much care and attention on planning and implementing our conference, we wanted to know whether we had met the professional development needs of our audience and what had motivated them to attend the conference. We evaluated attendees immediately after the conference and followed up with them 10 months later, a common evaluation progression for evaluation of Extension conferences (Chase & Kuehn, 2010). We believe that sharing the feedback we received from women farmers and other professionals working in sustainable agriculture will benefit our colleagues in Extension and their program partners when planning events and seeking to engage with similar audiences.

Objectives

We wanted to know

- whether the conference served as a catalyst for personal and professional growth and whether it

contributed positive impacts for attendees,

- what participants perceived as the most important advantages to choosing a women-focused educational conference, and
- how Extension events or conferences can better meet the needs of women working in sustainable agriculture.

We also wanted to dig deeper into attendees' backgrounds and conference experiences to learn

- what sectors of women working in sustainable agriculture attended the conference;
- what knowledge increase, behavioral changes, and/or conditional impacts resulted from attendance;
- what personal and/or professional connections were established following attendance;
- why participants chose to attend the conference;
- what conference aspects were most valuable to the audience; and
- whether participants were more likely to engage in specific ways because the attendees were primarily women.

Methods

In the week following the December 2016 conference, we solicited feedback from attendees using a 13-question survey created in Qualtrics. The survey was designed and reviewed by members of the conference committee and included questions often used in Extension to measure short-term outcomes following an event (Chase & Kuehn, 2010). We asked about the general conference experience and logistics; captured demographic information about the attendees; and asked participants whether the event had increased their knowledge, expanded their personal or professional network, and/or influenced future actions. Only one initial request email with the survey link was sent to all 405 participants. The survey was completed by 169 attendees (42%).

In late summer 2017, we designed a retrospective evaluation to assess conference impacts on participants' behavior and actions 10 months after the conference. We used Qualtrics again to develop an online survey. It was reviewed and approved by OSU's Institutional Review Board, and to the extent possible and practical, followed recommended guidelines for data quality (Radhakrishna, Tobin, Brennan, & Thomson, 2012) and best practices for Internet surveys (Dillman, Smyth, & Christian, 2014). Figure 1 shows the complete set of questions.

Figure 1.
10-Month Retrospective Evaluation Instrument

Question

Q1: What is your role in Agriculture (choose all that apply)

| | | | |
|-----------------------|---|---|---|
| Answer Choices | - Farmer - Landowner - Farm Worker - Farm Intern - Agricultural Business/Services | - Student - University Extension - University (not Extension) | - United States Department of Agriculture - Agency (not USDA) - Non-Profit - Other |
|-----------------------|---|---|---|

Q2: Where do you live?

Q3: What have you done over the past year as a result of attending the conference?

| | | | |
|-----------------------|---|---|---|
| Answer Choices | Applied a new skill, technique or practice on farm. | Taken action on an issue of policy or advocacy. | Used information in teaching, outreach or education in your work. |
|-----------------------|---|---|---|

Q4: How have you connected with others you met at the conference?

| | | | |
|-----------------------|---|---|---|
| Answer Choices | - Collaborated with another attendee on a project, grant, or program - Sought or received technical information from someone | - Consulted with another attendee to solve a problem - Made a business contact | - Connected personally (established a support system or made a new friend) - I was contacted by a fellow conference attendee |
|-----------------------|---|---|---|

Q5: There are many agriculture/farming conference opportunities each year. Why did you choose to attend this conference?

| | | | |
|-----------------------|--|---|---|
| Answer Choices | - Opportunity to attend a women-focused sustainable agriculture conference - Networking with other women farmers and agricultural professionals | - Conference program that focused on women farmers and agricultural professionals - Conference workshop and tour offerings | - Location and venue - Keynote speakers - Other |
|-----------------------|--|---|---|

Q6: Did you feel that attending a conference specifically for women had advantages over other more general agricultural conferences you have attended?

Scale Yes, significant advantages ----- to ----- No advantages

Q7: What conference elements are most useful to you?

| | | | |
|-----------------------|--|--|---|
| Answer Choices | - Professional Presentations - Keynote Speakers | - Presentations from peers - Hands on workshops | - Tours - Trade shows/vendors - Other |
|-----------------------|--|--|---|

Scale Most Useful ----- to ----- Least Useful

Q8: What components are most valuable to you when attending a conference?

| | | | |
|-----------------------|---|---|---|
| Answer Choices | - Organized formal networking time - Informal networking time (during meals or breaks) - Time for sharing and discussion during presentations and workshops | - Access to organizers for assistance and information during the conference - Communication from conference organizers prior to the conference | - Food - Child care - Unstructured free time in the schedule - Other |
|-----------------------|---|---|---|

Scale Yes, extremely Valuable ----- to ----- Not Valuable

Q9: When do you find your most effective networking takes place?

| | | | |
|-----------------------|--|--------------------------------|-------------------------------|
| Answer Choices | - During panel and discussion sessions | - Over meals - During tours | - During free time - Other |
|-----------------------|--|--------------------------------|-------------------------------|

Scale Most Effective ----- to ----- Least Effective

Q10: Are you more or less likely to do the following in a conference or learning environment when the group is composed mostly of women?

| | | | |
|-----------------------|---|--|--|
| Answer Choices | - Ask a question - Answer a question - Share a personal story | - Contribute to a discussion - Voice an opposing viewpoint - Ask someone for contact information | - Share your contact information - Follow up with a fellow attendee - Comments |
|-----------------------|---|--|--|

Scale More Likely ----- to ----- Less Likely

The 10-month retrospective evaluation instrument was emailed to all 405 conference attendees. We invited participants to reflect on their conference experience and share how attendance may have affected them personally and professionally. As an incentive for taking the survey, one of two free books—*The Color of Food* and *Farming with Native Beneficial Insects*, which had been featured at the conference—was offered to the first 67 survey respondents.

Within days, over 67 attendees had completed the evaluation. In total, 111 attendees had submitted responses after one follow-up email. By using an analysis method that compared the number of respondents in both surveys (Gelman & Hill, 2007), we determined that the results of the immediate postconference survey ($n = 169$) and the retrospective evaluation survey ($n = 111$) were accurate at the 95% confidence level, plus or minus 7 and 9 percentage points, respectively. We tested whether the respondents in the immediate postconference survey were equivalent to the respondents in the retrospective evaluation by means of a "state of residence" question common to both surveys. Using a two-sided Fisher's exact test for count data, we found no significant bias between the two survey evaluations ($p = .804$). In the "Results" section herein, we focus primarily on findings from our 10-month retrospective evaluation.

Results

The target conference audience comprised women working in any sector of sustainable agriculture. The term sustainable was not defined by organizers, but throughout the history of the conference, the term has come to characterize small, medium, and large agricultural systems that emphasize the connections across environmental stewardship, quality of life for farmers, social justice related to food, and economic opportunities for individual farmers and communities.

The conference attracted participants with diverse, often multiple roles. Multiplicity is common among groups such as the conference target audience (Trauger, 2004). Of 109 individuals who responded to the question addressing "roles," 68 indicated having one role, and 41 indicated having two or more roles. Of those responding, 51% identified with the role of farmer (at a 95% confidence interval with an 8% margin of error). Of the 56 individuals who identified as farmers, 22 identified solely as farmers, 20 identified with a second role as well, and 14 identified with two or more roles in addition to farmer. Table 1 shows the role choices and the numbers and percentages of respondents who identified with the roles.

Table 1.

Participants' Self-Identified Roles in Agriculture
($n = 109$)

| Role | % |
|-------------------------------------|---------|
| Farmer | 56 51.4 |
| Landowner | 17 15.6 |
| Farmworker | 10 9.2 |
| Farm intern | 1 0.9 |
| Agricultural business (not farming) | 6 5.5 |
| Nonprofit | 23 21.1 |
| Student | 9 8.3 |
| University Extension | 20 18.3 |
| University (not Extension) | 3 2.8 |
| U.S. Department of Agriculture | 5 4.6 |

Regarding actions taken as a result of attending the conference, respondents reported that they had used information learned at the conference in their teaching, outreach, or education work (77%); applied a new skill, technique, or practice on-farm (42%); and acted on an issue of agricultural policy or advocacy (38%). Students, Extension and other university professionals, and agency and nonprofit representatives more often reported using information in teaching or outreach whereas landowners, farmworkers, and those in related agricultural businesses more often reported applying a new skill. However, across all roles, participants were more likely to have applied conference information to work-related teaching, outreach, or education than to have engaged in the other two activities.

We asked participants to share specific examples of how attending the conference had affected their professional and/or personal lives. For respondents who had applied a new skill, technique, or practice on-farm, practices related to marketing, enterprise evaluation, technology use, holistic management, ergonomics in farming, and hiring and supervising interns or apprentices were frequently cited. One respondent said, "I am creating a more ergonomic pack/wash station, since I do most of the postharvest processing."

Those who had acted on issues of policy or advocacy had joined local, regional, or national groups; run for office; or founded advocacy or policy groups. They had lobbied, petitioned, and advocated on behalf of women, LGBTQ+, and minority farmers. One respondent had helped "the town of Taos, New Mexico, develop an integrated pest management strategy to avoid pesticide use on municipal grounds to protect pollinators and the community."

Participants who had used information in teaching, outreach, or education in their work had engaged in a diverse range of activities that included writing articles and blogs, publishing social media content, organizing workshops and field days, consulting with beginning farmers, improving intern training programs, and sharing information with colleagues, teams, and communities.

We were very interested in the impacts of conference networking among participants. We asked specifically about the connections, relationships, and collaborations created and maintained since the conference's completion. From the immediate postconference survey, we had learned that 63% of respondents met new people and expected to continue those associations. Twenty-nine percent indicated that they were likely to remain in contact with other participants.

In the follow-up survey, 92 participants responded that during the 10 months following the conference, they had engaged in activities such as continuing to connect with other attendees on professional and personal bases, collaborating with other attendees on project work or problem solving, and sharing or soliciting advice and technical information. The types of networking in which participants engaged following the conference are highlighted in Table 2.

Table 2.
Postconference Networking Among Participants ($n = 92$)

| Feature | Personal Connections: What Women in Sustainable Agriculture Value in Their Professional Development | JOE 57(5) | % |
|--|---|-----------|------|
| Suggested type of contact | | | |
| Made a professional contact | | 53 | 57.6 |
| Connected personally, established a support system, or made a new friend | | 49 | 53.3 |
| Was contacted by a fellow conference attendee | | 36 | 39.1 |
| Sought or received technical information from someone | | 24 | 26.1 |
| Collaborated with another attendee on a project, grant, or program | | 23 | 25.0 |
| Made a business contact | | 23 | 25.0 |
| Consulted with another attendee to solve a problem | | 20 | 21.7 |

Note. Because this question was multiple choice and participants could choose more than one answer, the frequencies reflect the number of times a type of connection was selected by one of the 92 respondents and the percentages reflect the number of choices across all respondents. The percentages are higher relative to the number of respondents.

Participants were asked to provide specific examples of networking that had occurred following the conference. Connections made after the conference can be classified as contact between two or more farmers, a connection or mentor relationship between an agricultural professional and a farmer, or a professional interaction between two or more agricultural professionals.

In an example of a farmer-to-farmer exchange, one participant said that she had toured another producer's farm and then regularly received advice from that producer.

Connections between agricultural professionals and farmers were characterized by a farmer's contacting an agricultural professional or vice versa. Examples of these connections included an agricultural professional's asking a farmer she met at the conference to serve on an advisory committee for an agricultural water quality management area and a farmer's having "sought and received technical information from USDA-FSA [U.S. Department of Agriculture Farm Service Agency]."

Connections made between agricultural professionals commonly resulted in the formation of new working teams, illustrated by two attendees who met, started a soil health group, and collaborated on a grant proposal.

A few unexpected responses emerged. One respondent met "a potential life partner." Others reported the positive experience of meeting a farmer, a speaker, an author, or another individual they only had heard about or communicated with virtually. Fifty-three individuals shared specific examples of how they had met and maintained relationships with individuals from their regions. At least seven who had attended the conference with other members of their organizations collaborated to use information from the conference to address local issues and strengthen professional friendships. For example, one respondent said, "Multiple people from my organization attended the conference, and we've had frequent relevant conversations regarding things we learned since."

Because farmers and agricultural professionals can choose from many different agricultural and farming conferences and educational events, we wanted to know what convinced over 400 people to attend our conference. For 86% of respondents who participated in our 10-month retrospective evaluation, the opportunity to attend a women-focused sustainable agriculture education event was their primary motivation.

The 10-month-evaluation respondents also reported wanting to network with other women farmers and agricultural professionals (73%) and being attracted to a conference program featuring women farmers and agricultural professionals as presenters (70%). Table 3 shows how frequently a motivation was selected and the percentage of total respondents choosing that answer.

Table 3.

Motivations for Attending the 2016 National Conference for Women in Sustainable Agriculture ($n = 110$)

| Suggested motivation | % |
|---|----------|
| Opportunity to attend a women-focused sustainable agriculture conference | 95 86.4 |
| Networking with other women farmers and agricultural professionals | 80 72.7 |
| Conference program that focused on women farmers and agricultural professionals | 77 70.0 |
| Location and venue | 71 64.5 |
| Conference workshop and tour offerings | 53 48.2 |
| Keynote speakers | 27 24.5 |
| Other (please specify) | 20 18.2 |

One participant remarked, "The female perspective on farming, leadership, communication, and being a business owner in general is unique. This was an important conference for me." Her viewpoint was shared by many who attended the conference, with 99% of respondents perceiving advantages to attending a conference specifically for women compared to other general agriculture conferences.

We also invited participants to share how they engage when a conference or learning environment is comprised mostly of other women and found that

- 74% were more likely to share a personal story ($n = 89$),
- 62% were more likely to contribute to a discussion ($n = 88$),
- 59% were more likely to ask a question ($n = 89$),
- 53% were more likely to answer a question ($n = 87$), and
- 45% were more likely to voice an opposing viewpoint ($n = 88$) or ask someone for contact information and/or share their own ($n = 89$).

We used the Borda method, which ranks options or choices in preferential order (Marchant, 2000), to understand which conference aspects participants considered most useful, valuable, and effective. Our results align with examples from relevant literature (Long et al., 1980; Trauger et al., 2008) and our personal Extension experiences with this audience. Peer-to-peer learning, discussion time built into workshop sessions, and both formal and informal networking sessions were highly ranked. The most effective networking

Table 4.
Participants' Ranking of Useful, Valuable, and Effective Conference Aspects

| Evaluation category | Borda score | Conference element |
|---------------------|-------------|---|
| Usefulness | | |
| Most useful | 583 | Professional presentations* |
| | 579 | Presentations from peers* |
| | 493 | Hands-on workshops* |
| Somewhat useful | 463 | Tours |
| | 426 | Keynote speakers |
| Least useful | 283 | Trade shows/vendors |
| | 141 | Other |
| Value | | |
| Most valuable | 806 | Time for sharing and discussion during presentations and workshops* |
| | 777 | Informal networking time (during meals or breaks)* |
| | 724 | Organized formal networking time* |
| | 606 | Communication from conference organizers prior to the conference* |
| Somewhat valuable | 528 | Food |
| | 512 | Access to organizers for assistance and information during the conference |
| Least valuable | 379 | Unstructured free time in the schedule |
| | 256 | Childcare |
| | 137 | Other |
| Effectiveness | | |
| Most effective | 440 | Mealtimes* |
| | 349 | Tours* |
| Somewhat effective | 334 | Panel and discussion sessions |
| | 295 | Free time |
| Least effective | 112 | Other |

Note. A higher score for an option signifies higher rankings by the attendees. Items with similar scores can be considered equally popular. Items marked with an asterisk (*) reflect significantly higher rankings compared to other choices.

Discussion and Recommendations

The 5th National Women in Sustainable Agriculture Conference was planned to provide an engaging educational event where women felt comfortable networking, learning, and sharing information.

More than half of participants who responded to our retrospective evaluation had connected personally with others, established a support system, or made a new friend during or after attending the conference. More than 70% chose to attend the conference for the networking opportunities with other women farmers and agricultural professionals.

We assumed that female attendees would be more comfortable participating in or asking questions when surrounded by a predominantly female peer group. Our respondents were indeed more likely to share a personal story, contribute to a discussion, and ask and answer questions at this conference than at other general agriculture conferences.

Ninety-eight partial scholarships were given to farmers who requested assistance to attend the conference. Many recipients indicated that financial support influenced their decision to attend. Forty-one percent shared that they would not have been able to attend without the scholarship funds, and 38% reported that they could have participated but probably would not have without receiving scholarships.

Sourcing local, seasonal whole foods for all meals was a priority for us as conference organizers. However, most of our attendees did not rank food among the most valued conference components. We feel we could have selected and highlighted a few key items from local farms and ranches and spent more time and money on other conference elements.

Through our experience hosting and evaluating the conference, we determined several key factors that others planning agricultural events and conferences may want to consider when seeking to engage women participants.

First, plan a program with high-quality, content-rich presentations and interactive sessions. Conferences compete for attendees' time and financial resources. Include varied, relevant, and engaging educational opportunities that reach attendees with different learning styles.

Allow plenty of time for formal and informal networking. Many women desire collaborative and relational conversations that may lead to lasting partnerships, cooperative projects, or simply support for one another. Intentionally building time into the conference program for networking ensures that attendees have opportunity to engage with each other.

Avoid scheduling speakers during mealtimes as this is the primary time for informal networking. We scheduled high-impact speakers during mealtimes so that all attendees could hear their messages. In retrospect, we recognize that this was a mistake. Our attendees felt that a key time for informal, effective networking was during meals following conference sessions, when there is much to discuss.

Be thoughtful when planning meals and food, but with an understanding that although source and quality of food may be very important to some attendees, it will be less important to others. Food selection and dietary needs are uniquely personal, and not everyone can be satisfied.

When targeting a producer or student audience, provide scholarships. Agriculture professionals often have financial budgets for conference attendance and travel; however, farmers and students do not. Providing scholarships or discounted registrations can significantly increase participation by farmers and students.

If an event is focused specifically on women farmers or agricultural professionals, women should be involved

in the planning process. They should make up the majority of speakers and presenters, and topics should be diverse and relevant to women. When calling for presentation proposals, clearly communicate that every woman has knowledge and experience that is valuable and that other women will benefit when it is shared.

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References

- Brasier, K., Barbercheck, M., Kiernan, N. E., Sachs, C., Schwartzberg, A., & Trauger, A. (2009). Extension educators' perceptions of the educational needs of women farmers in PA. *Journal of Extension*, 47(3), Article 3FEA9. Available at: <http://www.joe.org/joe/2009june/a9.php>
- Chase, L., & Kuehn, D. (2010). Measuring outcomes of Extension conferences: A case study of the National Extension Tourism Conference. *Journal of Extension*, 48(3), Article 3FEA6. Available at: <https://www.joe.org/joe/2010june/a6.php>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail and mixed-mode surveys: The tailored design method* (4th ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Donnellon, A., & Langowitz, N. (2009). Leveraging women's networks for strategic value. *Strategy & Leadership*, 37(3), 29–36. doi:10.1108/10878570910954628

Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. Cambridge, UK: Cambridge University Press.

Kiernan, N. E., Barbercheck, M., Brasier, K. J., Sachs, C., & Terman, A. R. (2012). Women farmers: Pulling up their own educational boot straps with Extension. *Journal of Extension*, 50(5), Article 5RIB5. Available at: <https://www.joe.org/joe/2012october/rb5.php>

Long, J. S., Bullock Lamberts, M., & Quehm, M. (1980). Conferences: What happens off the agenda? *Journal of Extension*, 18(6). Available at: <https://joe.org/joe/1980november/80-6-a4.pdf>

Marchant, T. (2000). Does the Borda rule provide more than a ranking? *Social Choice & Welfare*, 17(3), 381–391. doi:10.1007/s003550050169

Radhakrishna, R., Tobin, D., Brennan, M., & Thomson, J. (2012). Data quality checklist for research and evaluation studies in Extension. *Journal of Extension*, 50(3), Article 3TOT1. Available at: <https://www.joe.org/joe/2012june/tt1.php>

Rivera, W. M., & Corning, S. L. (1990). Empowering women through agricultural Extension: A global perspective. *Journal of Extension*, 28 (4), Article 4FEA9. Available at: <https://www.joe.org/joe/1990winter/a9.php>

Trauger, A. (2004). "Because they can do the work": Women farmers in sustainable agriculture. *Gender, Place and Culture*, 11(2), 289–307. doi:10.1080/0966369042000218491

Trauger, A., Sachs, C., Barbercheck, M., Brasier, K., Kiernan, N. E., & Findeis, J. (2008). Agricultural education: Gender identity and knowledge exchange. *Journal of Rural Studies*, 24(4), 432–439. doi:10.1016/j.jrurstud.2008.03.007

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