Social Networking and Social Media as Resilience Strategies Among US Women Farmers

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University of Vermont

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SOCIAL NETWORKING AND SOCIAL MEDIA AS RESILIENCE STRATEGIES AMONG US WOMEN FARMERS

A Thesis Presented

by

Kerry Daigle

to

The Faculty of the Graduate College

of

The University of Vermont

In Partial Fulfillment of the Requirements for the Degree of Master of Science Specializing in Community Development and Applied Economics

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Thesis Examination Committee:

Sarah N. Heiss, Ph.D., Advisor
Teresa Mares, Ph.D. Chairperson
Travis W. Reynolds, Ph.D.
Cynthia J. Forehand, Ph.D., Dean of the Graduate College
Abstract

Women farmers worldwide have long been under-recognized and undervalued in agricultural contexts. Traditionally, women farmers in the United States have experienced limited access to land, equipment and training, and women often bear the brunt of household responsibilities. Despite the significant challenges they face, women farmers have developed creative ways to access farming opportunities, including through alternative farming operations that use sustainable agricultural methods. Such strategies have allowed women farmers to remain resilient, while also bringing an array of benefits to the environmental, social, and economic well-being of rural communities.

Barriers that women farmers face in agriculture have been increasingly studied, but the unique strategies women enact to cope with environmental and economic challenges have not. Buzzanell’s (2010) Resilience Communication Theory suggests that forming and maintaining communication networks is essential to resilience processes. Other past research has suggested that the internet is a valuable platform for women farmers to network with others and find support for their farms and farm businesses.

This thesis uses data from semi-structured interviews with 42 women farmers in nine states to explore how women use communication networks for support on their farms. Drawing on responses to interviews, I show how communication networking contributes to and reifies the resilience of women farmers, their farm businesses, and the greater sustainable agriculture sector. I further examine how women farmers perceive the internet and social media as contributing to the resilience of their farming practices. Findings seek to increase knowledge of women farmers’ preferred networking practices, in order to better facilitate and support women in agriculture.
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Chapter 1: Introduction

To the average observer, the 2017 Agricultural Census showed unprecedented growth among women farmers in the United States over the past five years (USDA, 2019). The proportion of women farmers overall increased by 30% while the number of male farmers remained nearly constant, and women principal operators nearly doubled to now constitute a third of all farmers in that position (USDA, 2019). However, upon closer look, it turns out those farmers may have been there all along, the census just got better at finding them (Herath, 2019).

Women farmers worldwide have long been under-recognized and undervalued in agricultural contexts (Dixon, 1982; Sachs, 1983). Traditionally, women farmers in the United States experience limited access to land, equipment, knowledge, and face undue burden of household responsibilities (Allen & Sachs, 2012; Keller, 2014; Leckie, 1996). The constructed expectations of women’s capabilities in farming contexts has shaped the position of women on US farms today; in general, women operate “smaller, less-capitalized farms and have lower farm income and farm sales then men” (Allen & Sachs, 2011, p. 28).

Despite the significant barriers that they face, women farmers remain resilient and bring an array of benefits to the environmental, social, and economic well-being of rural communities. Women are more likely to operate farms using sustainable agricultural methods than conventional methods (Trauger, 2004), they produce a large share of high-value and value added products (Wright & Annes, 2014), and they frequently engage in
business models that prioritize community engagement such as community supported agriculture (CSA) or agritourism operations (Ball, 2014; Jarocz, 2011; McGehee, Kim, & Jennings, 2007; Sachs et al., 2016).

Gender barriers that women farmers face in agriculture have been increasingly studied, yet, the unique strategies women enact to cope with increasing environmental and economic stressors have not (Contzen & Forney, 1996; Keller, 2014).

Resilience communication theory (Buzzanell, 2010) is a useful lens for examining how women farmers develop or maintain resilience throughout the challenges of farming. This paper defines resilience as the ability to withstand and bounce back from either sudden disaster or enduring hardship. While some disciplines view resilience as a trait that is either innate or achieved, a communicative lens frames resilience as a dynamic, on-going process that is co-created by the way people collectively make sense of their experiences. Adopting a communicative lens for resilience is valuable because it examines the processes by which resilience is developed and maintained in community with others.

A key component of the resilience process is a person or community’s ability to maintain and use communication networks (Buzzanell, 2010). Current research demonstrates that in response to exclusion from dominant agricultural knowledge, women farmers have developed networking practices that vary from their male counterparts. Unlike male farmers who often prefer formal agricultural educational programing, women farmers may be more likely to rely on both formal and informal support networks to facilitate their success in agriculture (Barbercheck et al. 2014; Hassanein, 1997; Trauger et al. 2010). Past research at the University of Vermont has
further suggested that the Internet may serve as a critical platform through which women farmers access and maintain these support networks (McPeters, 2018; Putscher, 2018).

While we know that women draw on communication networks for support (Hassanein, 1997; Hassanein, 1999), this research fills a gap in the understanding of how they use these networks and their perceived value to the resilience of women farmers and their farm businesses. My research aims to contribute to the success of women farmers and the well-being of rural communities through better informing the organizations that provide education and resources for women farmers.

1.1 Research Questions

Specifically, my thesis is guided by the following overarching research questions:

**RQ 1:** How do US women farmers maintain and use communication networks for support on their farms?

**RQ 2:** How do US women farmers use social media to participate in formal and informal networks within agricultural contexts?

**RQ 3:** To what degree do US women farmers perceive social networking as effectively contributing to their ability to be resilient on their farms?

To explore my research questions, I begin Chapter 2 with a comprehensive literature review on women’s barriers and contributions to US farms, women farmers’ networking practices, and resilience communication theory. In Chapter 3, I use qualitative data from 42 interviews to examine broadly how women use communication
networks and the value these bring to resilience in food systems contexts. In Chapter 4, I use qualitative data from the same set of interviews to analyze specifically how women farmers use social media and the perceived benefits of social media use to their farm businesses. Finally, in Chapter 5, I conclude with a discussion of overall contributions of my research and potential future research directions.
Chapter 2: Comprehensive Literature Review

2.1 Gender Constructions in Farming

The invisibility of women farmers in agriculture both shapes and is shaped by societal constructions of gender and farming. While there is nothing “inherently female or male” about agricultural tasks, cultural and social formations deeply affect theoretical and realized positions of different genders and farming (Leckie, 1996, p. 310). As this section will describe, access to land, divisions of labor on the family farm, perceptions of the farmer body, and agricultural knowledge all closely interact to create barriers to women’s success as farmers.

2.1.1 Women’s Access to Agricultural Land

Legally, women farmers in the United States have always faced barriers to owning their own farms (Sachs, 1983). All farmers had trouble accessing land at the start of small farm operations, but for women farmers, it was nearly impossible. Land ownership moved through generations from father to son. When there were no sons to inherit the land it briefly passed to the daughter, however, it immediately went in her husband’s name upon marriage (Sachs, 1983). Thus, the male consistently assumed the role of owner and decision-maker on the farm, and were able to control the tasks that women were and were not permitted to do. While women acquired legal ownership of farmland beginning in 1850, internalizations about women’s legitimacy in owning and operating their own land persist (Keller, 2014; Pilgeram & Amos, 2015).
Women’s perceived lack of legitimacy still affects their ability to access farmland today (Horst & Marion, 2018; Keller, 2014; Pilgeram & Amos, 2014). For example, a young farmer in Kansas reported that she experienced hesitancy from a landowner when trying to purchase land as a young, single woman (Keller, 2014). Exclusion from access to farmland has been the most severe for women of color who, as of 2012, were still owner-operators of just 0.7% of all agricultural farmland in the United States (Horst & Marion, 2018).

2.1.2 Divisions of Labor on the Family Farm

The understanding of women farmers’ capabilities in many ways derives from traditional divisions of labor on the family farm. From the start of the agrarian economy, families have utilized the family farm model as an adaptive strategy to organize farm businesses around flexible labor (Fresco, 1994). In the off-peak season, tasks on the farm were divided by gender: men took care of the field crops, large livestock, and land clearing, while the women tended to garden crops, small livestock, and domestic production (Sachs, 1983). However, during the busy season, women were a source of immediate, free labor, and expected to jump in and perform male tasks on the farm.

This arrangement was not ideal for either gender, and it is suggested that men may have reinforced their wives’ position in efforts to preserve their wealth status. According to Sachs (1983), “the hierarchical system between men farmers confers higher status to men who are able to afford to keep their wives out of the fields. On the other hand, many farmers are caught in the price squeeze and unable to keep women removed from agricultural production” (p. xii). She suggests that women’s behavior furthered this
structure, as women resisted the patriarchal control by male farmers through carving their own roles in agriculture. Because white men did not want their wives’ work on the field to be obvious, and women preferred their own tasks instead of filling in for the men, women became the unseen and unacknowledged workers on the farm. While men assumed the status of ‘farmer’, the women’s contributions were considered supplementary (Contzen & Forney, 2017; Sachs, 1983). Women also performed these additional agricultural tasks while receiving no perceived household and childcare responsibilities as “women’s work.” Contzen & Forney (2017) further believe that this status in farm and household configurations, more so than gender identities, contribute to enduring power inequalities on farms.

It is important to emphasize that these were generally the experiences of white farming families in the US, and the gendered experiences of women farmers of color were much different. For example, in the south, the exclusion of farmers’ wives on family farm models, most often, was upheld at the expense of labor black farm tenants after the abolition of slavery (Tolnay, 1984). This had deep impacts on the family formation and division of labor among these populations, and resulted in different experiences of farming for black women. Tolnay (1984) argues that the position of black farmers encouraged early marriage, where women also participated on the farm and both members of the farm couple were locked into the subsidiary positions in the agricultural economy. The farm experience is also different for immigrant women farmers, who find themselves on farms “as a result of labor displacement, to follow family members, or to escape domestic violence” (Waugh, 2010, p. 240). These women not only experience exclusion from ownership or decision-making, but also are at risk in their work
environments, often subject to sexual harassment and unsafe work conditions (Allen & Sachs, 2011; Waugh, 2010).

On the US family farm, patriarchal configurations have gone through many evolutions toward greater decision-making authority for some women; however, women’s inferior status on farms still endures. Even today, women farmers report a hesitation from males to step in and assist with household and domestic responsibility (Peter et al., 2000). In many instances, this perpetuates with each new generation on the family farm. For example, in Ontario, a young women farmer says she was “never trusted to drive [the tractor]” like her brother was because her father only conceived her to be capable of learning less-mechanized tasks (Leckie, 1996). This particular young woman performed some tasks on the farm; yet, most of her upbringing involved learning domestic skills from her mother, such as sewing, cooking and childcare, while her brother was out learning in the field. In this case, socially constructed ideas of women’s responsibilities and abilities turn into concrete outcomes as women grow up to lack the full set of skills they need to participate in all agricultural tasks.

2.1.3 Farming and the Body

Women farmers’ bodies are another poignant illustration of the many interacting forms of gender bias in farming. From a young age, girls are taught to control their bodies in feminine ways (Young, 1990). Society not only tells girls what size to be and how to dress, but initiates them into a prescribed set of rules that associate woman’s bodies with “nurturance, dependence, passivity, and incompetence” (Tretheway, 2012, p. 424). Further studies argue that professional women must make conscious negotiations to
succeed in workplaces that privilege traditionally male embodiments of strength, ability, and intelligence (Bartky, 1998; Tretheway, 2012).

In the workplace of the women farmer, constructed images of rugged masculinity and agricultural machinery are inextricably tied (Brandth, 1995; Brandth, 2006; Saugeres, 2002). For men, the struggle to survive in farming has been equated with the struggle to maintain one’s masculine identity (Coldwell, 2007). Women, on the other hand, find that their bodies are “subject to discourses about who can be a farmer and whose bodies belong in the spaces of agriculture” (p. 438). Companies that produce and sell agricultural machinery not only promulgate this image through media and advertisement, but render women as “irrelevant buyers and users of tractors” when considering equipment design and sizing (Brandth, 1995, p. 126). Women are not able to buy farming equipment that properly fits their bodies, nor are they able to access trainings that teach women to use their smaller statures in innovative ways to occupy any position needed on the farm (Trauger et al., 2008). Research suggests that women who are able to develop tractor skills use them as a way to assert dominance within farming contexts and disrupt preconceived understandings of farming and femininity (Brandth, 2006; Saugeres, 2002).

2.1.4 Agricultural Extension Education

Perhaps the most prolific formal institutionalization of gender exclusion in farming is through agricultural extension services. Trauger and colleagues (2008) argued that “long-held social constructions of women as farm wives or ‘bookkeepers’ rather than farmers or decision-makers influences the direction of most educational programming delivered through extension programs in land-grant universities in the United States”
Instead of helping women overcome constraints to participation, these institutions reproduce prohibitive barriers by failing to support women’s educational needs such as machinery training, a hands-on and interactive learning style, and space to ask questions openly and without concern for being perceived negatively by male farmers (Barbercheck et al., 2009; Brasier et al., 2009).

Liepins and Schick (2002) developed a gender framework for evaluating education programs, and argue that agricultural extension services have become a medium that maintains gender differences in agriculture. According to their framework, it is not inconsequential that women bring different life experiences and perspectives to extension than the men who attend and teach the courses. Many factors, such as women’s perceived self-legitimacy in their needs, and their ability to advocate for their learning preferences, contribute to misaligned services for women farmers.

Mary Peabody, a community economic development specialist from UVM, saw first-hand the way traditional education models exclude women. During the course of running many extension-training sessions, Mary noticed that women farmers were saving their questions until the break or after the session, instead of feeling comfortable posing them to the larger group (Sachs et al., 2016). Recognizing this, Mary started Women’s Agricultural Network (WAgN) as an opportunity for women farmers to meet, network with, ask questions, and share ideas with other women farmers. The program has now spread to many networks around the country and has become one of many emerging organizations that seek to provide more appropriate education and resources for women farmers.
However, while some educators today understand the unique experiences of women farmers, many do not; in Pennsylvania, 26% of extension educators in one study believed that women’s educational needs were no different than men’s, and an additional 15% never even considered that men and women farmers’ needs might diverge (Brasier et al., 2009).

2.3 Women Farmers and Sustainable Agriculture

Exclusion from land, legitimacy, machinery skills, and formal education all interact to create barriers for women farmers’ success in agriculture. Consequently, women operate “smaller, less-capitalized farms and have lower farm income and farm sales than men” (Allen & Sachs, 2011, p. 28). Yet, as this section will describe, women have fought back against these systems of marginalization to find themselves at the forefront of growing alternative agriculture movements in the United States.

2.3.1 Paradigm Shifts in Sustainable Agriculture

Women are more likely to operate farms use sustainable agricultural methods than conventional models (Trauger, 2004). Sustainable agriculture refers to farming methods that “equitably balance concerns of environmental soundness, economic viability, and social justice among all sectors in society (Allen, Van Dusen, Lundy, Gliessman, 1991, p. 37). Beus and Dunlap (1990) argue that farmers who use these alternative methods operate under a separate set of paradigms than those in conventional agriculture; specifically: (1) decentralization instead of centralization, (2) independence instead of
dependence, (3) community over competition, (4) harmony with nature instead of domination of nature, (5) diversity instead of specialization, (6) and restraint vs. exploitation. More recently, Bell’s (2010) *Farming for Us All* uses the Practical Farmers of Iowa to establish how emerging alternative agricultural movements emphasize social relationships with other farms who share a similar identity. Whereas industrial agriculture provides farmers the comfort of uniformity, those participating in sustainable agriculture seek dialogue that will improve one’s farming knowledge and the collective experience of the farming community.

Past research generally agrees that the values and practices on sustainable farm models encourage women’s participation more than on conventional farm models, thus influencing the greater presence of women farmers in these spaces (Coldwell, 2007; Peter, Bell, Jarnagin, & Bauer, 2000; Pilgeram & Amos, 2015; Trauger, 2004). Peter et al. (2000) argue that the interrelational priorities of sustainable agriculture challenge traditional expectations of masculinity, and that, overall, success in sustainable agriculture required an “altered social arena” that encourages openness and acceptance of all voices (Peter et al., 2000, p. 216). Such farms allow women to challenge the traditional ideology of masculinity and femininity that contribute to power dynamics on conventional farms. Women who identified as “farm wives” on conventional farms typically view themselves as “farmers” and “decision-makers” on alternative farms (Sachs et al., 2016; Trauger, 2004). In addition to a greater acceptance of women’s knowledge in these spaces, the non-mechanized nature to sustainable agriculture allows women to participate and excel in all tasks on the farm (Trauger, 2004). Chiappe and Flora (1998) found that women hold similar values to men within the alternative
agriculture paradigm (Beus & Dunlap, 1990), but additionally value prioritize quality-family life and spirituality.

Yet, these farms are not perfect. Pilgeram (2019) argues that greater opportunity for women farmers “makes it easy to overlook the profound inequalities that women still face as farmers, including one of the largest occupational wage gaps in the US, regardless of their status as conventional or sustainable farmer” (p. 912). Further gender roles are more fluid on sustainable farms; however, ideas of masculinity and femininity remain tied to certain tasks (Peter et al., 2000). In particular, women report that men continue to resist taking over a share of household and domestic responsibilities, despite women’s increasing responsibilities on the farm (Peter et al., 2000).

In their recent book, The Rise of Women Farmers and Sustainable Agriculture, Sachs and colleague’s (2016) develop the Feminist Agrifood Systems Theory (FAST) as a useful tool to summarize women farmers’ role in sustainable farming systems in the Northeast. According to FAST, women in agriculture do not necessarily identify as feminists, but they do assert themselves as farmers, which, in itself challenges traditional patriarchal conceptions of farm compositions. Women must find creative solutions around accessing farmland and, therefore, often participate in non-traditional farming operations. Specifically, women ‘use strategies that emphasize smaller scale farms, diversified high-value and value-added products and enterprises, unique marketing challenges, and sustainable production practices (p. 145).

2.3.2. Benefits of Women Farmers Sustainable Agriculture Practices
As FAST previews, women’s engagements with alternative farming techniques prioritize sustainability and food quality over agricultural intensification (Trauger, 2008). In the Northeastern US, a significant percentage of women farmers use conservation practices such as riparian buffers, crop rotation, cover crops, and conservation tillage (Barbercheck et al., 2014). In 2007, the US Census of Agriculture found that women were “primary operators on 22% of the 20,437 organic farms, compared with the 14% of women who are principal operators on all farms” (Sachs et al., 2016, p.80). Many women begin and continue farming out of a concern for the degradation to natural habitat, soil and land nutrients caused by conventional agriculture (Sachs et al., 2016).

In additional to environmental conscientiousness, women’s farming practices play a prominent role in the social well-being of communities. In particular, women are at the forefront of increased Community Support Agriculture (CSA) and agritourism operations in the United States (Jarosz, 2011; McGee, Kim, & Jennings, 2007; Trauger, Sachs, Barbercheck, Brasier, & Kiernan). Jarosz (2011) argues from a feminist political ecology stance that women’s are interested in “making a life” through their farming practices over “making a living”, and they do so by prioritizing an ethics of care and nurturing social relations. Similarly, women farmers in Pennsylvania were found to transcend traditional economic rationality to promote civic agriculture, which refers to food production activities that “not only meet consumer demands for fresh, safe, and locally produced foods but create jobs, encourage entrepreneurship, and strengthen community identity” (Lyson, 2004, p. 2).

In addition to CSA’s, women farmers fill a unique niche in value added products and lead the growth of agritourism movements in the United States (Wright & Annes,
2016). Agritourism can be defined as “rural enterprises which incorporate both a working farm environment and a commercial tourism component”, such as “farm stays, bed-and-breakfasts, pick-your-own product, agricultural festivals, farm tours for children, or hayride” (Weaver and Fennel, 1997, as cited in McGehee & Kim, 2004). Researchers argue that value-added agriculture favors skills that women are traditionally raised to excel in, such as cooking, cleaning, and caring for others. Being in a sector that requires and values these skills serves to increase women’s visibility in farming (Brandth & Haugen, 2011; Wright & Annes, 2016). Supporting women farmers in these positions is necessary as agritourism and other value-added operations provide vital social and cultural benefits to rural communities (Schilling, Sullivan, & Komar, 2012; Wicks & Merrett, 2003).

2.3.3 Challenges to Sustainable Farms

While sustainable farming operations provide a space for women to experience less gender exclusion, feel aligned with values of nourishing others, and to better assert their identities as farmers, life on sustainable farms should not be romanticized. All farm work requires endless hours, is physically demanding, and often takes place in socially and geographically isolated areas (Brew, Inder, Allen, Thomas & Kelly, 2016). In the 21st century, the spread of large scale, industrial agriculture has exacerbated economic and environmental challenges for small farmers (Altieri, 2009). The effect this has had on farmer’s financial and mental wellbeing today cannot be understated (Brew et al., 2016; Berry, Hogan, Owen, Rickwood, & Fragar, 2011). In 2012, the CDC reported men of farming, fishing, and forestry jobs had the highest rate of suicide in the United States of any other occupation (McIntosh et al., 2012). More research is needed to understand how
women farmers are able to persist in such trying gender, financial, and environmental conditions.

2.5 Resilience of Women Farmers

2.5.1 What is Resilience and How is it Defined?

“Resilience” has become the new buzzword for research across all disciplines in recent decades, including environmental policy, ecology, psychology, human development, and economics (Folke et al., 2010; Masten & Reed, 2002; Marschke & Berkes, 2006; Nelson, Adger, & Brown, 2007). Like any frequently used concept, resilience has a variety of definitions and applications in research (Aburn et al., 2015; Affifi, 2018). This project defines resilience as an individual or group’s ability to withstand certain difficult life experiences or reintegrate after an isolated incident occurs (Buzzanell, 2010; Richardson, 2002; Ishak & Williams 2018). Early literature considered resilience to require a catastrophic event such as a natural disaster or the loss of one’s job, but is now understood to include “reoccurring and sometimes unanticipated losses that disrupt and challenge everyday life” (Long et al., 2015, p. 67). Most recently, work on resilience has been concerned with not only how a system, community or society can “bounce back” from disaster or hardship, but also how they may “bounce forward” and become better prepared for future or enduring challenges (Manyena, O’Brien, O’Keefe, & Rose, 2011).

The framing of resilience through communication studies is relatively new compared to the work of other disciplines (Affifi, 2018). Instead of viewing resilience as an individual trait, communication scholars view resilience as a process that it
fundamentally grounded in messages, discourse, and narrative. From this lens, resilience is co-constructed based on how we collectively make shared meaning of our experiences (Buzzanell, 2010). Thus, a person’s resilience is highly dependent on the existence of social relationships that allow them to make sense of their experiences.

2.5.2 Resilience Communication Theory

Buzzanell (2010) developed the foundational theory of resilience communication. Resilience communication theory understands resilience as enacted and maintained by five interactive processes: (a) crafting normalcy; (b) affirming identity anchors; (c) maintaining and using communication networks; (d) putting alternative logics to work; and (e) legitimizing negative feelings while foregrounding productive action. Buzzanell (2010) and others have applied the theory to better understand the ways disaster-relief workers avoid burnout in grueling work conditions (Agarwal & Buzzanell, 2015), how Chinese immigrants negotiate their identities in the workplace (Wu & Buzzanell, 2013), and how non-profit organizations endure the economic challenges of diminished external funding (Corpell, 2018). Figure 1 illustrates Buzzanell’s (2010) five defined processes:
Past literature demonstrates that women farmers rely on communication networks and social relationships to circumvent barriers to material and informational resources in agriculture (Hassenein, 1997; Putscher, 2018; Wypler, 2018). Therefore, this study focuses on the third process of developing and using communication networks. Communication networks refer to individuals and organizations that are connected through relationships and symbolic activity within a specific social context (Monge, Heiss, & Margolin, 2008). They can be used to obtain information, report, regulate, cooperate, or compete, and a host of other possibilities. They are characterized by co-constructed norms and values that provide a framework for symbolic activities, such as goodwill, trust, reciprocity, or transitivity (Monge & Contractor, 2003). Sligo and Massey (2007) found that under conditions of increasing risk, farmers may feel a sense of shared adversity, which may enable higher levels of trust and social networking behavior.
2.5.3 Women Farmers Networking Practices

In an evaluation of educational needs for farmers in Pennsylvania, women emphasized the benefits of social networking as a source of empowerment within agricultural settings (Trauger et al., 2009). Women highly valued the ability for social networks to provide an ongoing support system through which farmers can curb isolation, build shared trust, and exchange information about farming and products. Faced with a history of exclusion from agricultural knowledge, women farmers have developed unique ways of communicating and exchanging knowledge that is different from male farmers (Hassenein, 1995; 1997; 1999). Hassenein (1997) argues that “different experiences in everyday life may create multiple and partial perspectives,” and that “the knowledge women exchange emerges not only from their production activities, but from their experiences in a male-dominated industry (Hassenein, 1997, p. 256).

Unlike men farmers who often prefer formal agricultural educational programming, women farmers may be more likely to rely on both formal and informal networks to facilitate their success in agriculture (Barbercheck et al., 2014; Hassanein, 1997). Women farmers have been found to prefer interactive learning and the opportunity to explore ideas and hear from others based on lived experience, instead of traditional, “just the facts” lectures (Barbercheck et al., 2009, p.5). Overburdened with household and caregiving responsibilities, women farmers also prefer greater time and location flexibility considering that they are not always free to attend meetings in person. In order to best support these unique and less considered practices, it is important for more research to understand the ways women exchange support for their farm operations.
2.5.4 Past Research Findings at the University of Vermont

Two recent graduate level studies at the University of Vermont made important contributions to this project’s design and research question and are necessary to include in the background of this work. The first is a project by Carrie Putser of the UVM Food System’s Masters’ Program. Putser (2018) used the theory of agency and empowerment to study how women farmers’ farm structures and management help them overcome barriers they face on their farms in Vermont. Women farmers in this study used informal networking strategies as a means of fostering collective action to overcome barriers on their farms. Specifically, women farmers that Putsch interviewed stressed, “the importance of the internet in creating and maintaining women’s support networks was paramount” (Putsch, 2018, p.16). Women utilized these networked to answer questions about farming and their businesses, in addition to exchanging emotional connections with other women farmers who understood their positions. Putsch (2018) called for future research that further investigates the role of the internet in building support networks among women farmers.

Kali McPeters of the MS program in Community Development and Applied Economics (CDAE) conducted a second study that further informed this research project, McPeters’ (2018) investigated social media engagement among vegetable producers in Vermont. Her analysis of Instagram posts suggests that farmers actively use social media for informational and emotional support from other farmers, customers, and community members. The study calls for additional research that further investigates the use of social media in farming contexts and, more specially, one that incorporates direct user experiences through interviews with farmers.
My research seeks to contribute to and continue both of these studies’ calls for future research through closer examination of the online networking practices of women farmers.

2.6 Intersectionality in the Food System

While this study refers to women as a uniquely situated group in US agriculture, it is important to mention that gender is not the only defining element in one’s identity. There are many other elements, such as race, socioeconomic status, or sexual orientation that deeply affect farming experiences. Crenshaw’s (1995) theory of intersectionality can help understand how farmers who experience multiple forms of marginalization face compounded barriers to accessing certain positions in agricultural contexts. Such is the case for women principal operators in the United States. While the number of women principal operators is on the rise, it is still the case that all but 4% of these women are white (USDA, 2019). A disclaimer about intersectionality is important to note from the start, as there are cultural and socioeconomic factors that contribute to the resilience of our women farmers that others may not have.

As women contend with barriers to land, capital, credit and information, they have increasingly found support in alternative agri-food movements that resist the rigid gender norms of conventional agriculture (Sachs, 2018; Trauger 2004). However, the lessening of gender inequality within sustainable agriculture spaces does not dissolve steep economic and social barriers to participation (Pilgeram, 2019). As the environmental negligence of intensive agriculture becomes glaring, both producers and consumers are turning to food produced with greater ethical and environmental
consideration. This creates a price premium on market channels and land suitable for these farming methods (Guthman, 2004; Pilgeram, 2019). Women are often able to overcome these challenges, but it is overwhelmingly “white, educated, middle-class women” who have the class privilege to do so (Pilgeram, 2019, pg. 916). Therefore, this project’s focus on resilience communication among women principal operators does not allow it to address enduring racial and socioeconomic discrimination on U.S. farms.

Despite these discriminatory conditions, women farmers of color, as well as queer women farmers, are fighting back and resisting oppression in conventional and alternative agricultural spaces. Wypler (2019) found that, for LGBTQ farmers in the Midwest, building social networks with other LGBTQ farmers proved more helpful in circumventing heteropatriarchy hurdles than government agencies, close-by farms, sustainable agricultural organizations or women farmers groups. In addition, women of the Detroit Black Community Food Security Network use urban gardening as a way to resist against the systems of race and class discrimination that prohibit access to healthy foods in their community, while simultaneously being able to provide fresh food for those around them (White, 2011).

In earnest, this research project did not intentionally exclude the voices of non-white, socioeconomically disadvantaged women farmers. Indeed, a focus on principal operators was systematically bound to leave them out based on the susceptibility of sustainable agriculture to narrow opportunities for mobility. In an effort to support women operators, it is important that my research does not diminish the compounded challenges that many women farmers face.
Chapter 3: The Value of Women Farmers’ Communication Practices

3.1 Abstract

While women in the United States (US) are increasingly entering into or being recognized for their role as farm operators, researchers argue that women farmers have been and continue to be under recognized and researched. In face of increasing environmental and financial challenges, as well as a variety of challenges related to domestic life, women farmers remain resilient. Buzzanell’s (2010) Resilience Communication Theory suggests that forming and maintaining communication networks is essential to resilience processes. Drawing on interviews with 35 US women farmers, we argue that communication networking is valuable to food systems, specifically; these practices contributed to and reified the resilience of the individual farmers, their farm business, and the greater sustainable agriculture community. Implications for women farmers as a community of practice, as well as organizations serving these populations are discussed.

Keywords: Women farmers; resilience communication; sustainable agriculture; community of practice
3.2 Introduction

According to the 2017 United States Department of Agriculture (USDA) Census of Agriculture, 56% of farms have at least one female operator and a third of farms have a woman principal operator (USDA, 2019). Due to both a rise in women entering farming, as well as more accurate identification of existing women farmers, this statistic reflects a 27% increase in women farmers since the previous Census in 2012 (USDA, 2014, 2019). Despite these rising numbers, the exclusion of women in land property rights and subsequent characterization of women as “farm wives” have left women overlooked in traditional, conventional farm models (Keller, 2014; Leckie, 1996; Trauger, 2008). On average, women farmers today operate smaller farms for lower wages (Allen & Sachs, 2011), and are three times more likely to operate farms participating in sustainable agriculture (Trauger et al., 2008). Sustainable agriculture refers to farming methods that “equitably balance concerns of environmental soundness, economic viability, and social justice among all sectors in society (Allen, Van Dusen, Lundy, Gliessman, 1991, p. 37). Prior scholars have argued that farmers in sustainable agriculture operate within a separate paradigm; one that is concerned more about connecting to and protecting the earth than about money (Bell, 2010; Beus and Dunlap, 1990). There has been an increase in research on women farmers’ position and experiences in sustainable agriculture in the United States (Barbercheck et al., 2014; Hassanein, 1997; Trauger et al., 2009; Sachs et al., 2016); yet, more research is needed to understand how women farmers in sustainable agriculture access resources for support through the challenges of farming (Sachs et al, 2016).
Resilience communication theory (Buzzanell, 2010) is a useful lens for examining how women farmers develop or maintain resilience to the challenges of farming. Resilience can be defined as the ability to withstand and bounce back from difficult events. Traditionally, resilience has been situated as a desirable, stable state or outcome. The focus has been on individual status, organizational infrastructure, or policy outcomes. A communication lens frames resilience as a dynamic, on-going process that is co-created among people through discourse, interaction, and material considerations. Adopting a communicative lens for resilience is valuable because it examines the processes by which resilience is developed and maintained in community with others.

A key component of the resilience process is a person or community’s ability to maintain and use communication networks (Buzzanell, 2010). Current research demonstrates that in response to difficulties related to professional development, women farmers have developed networking practices that vary from their male counterparts. Unlike male farmers who prefer formal agricultural educational programming, women farmers rely on both formal and informal support networks to facilitate their success in agriculture (Barbercheck et al. 2014; Hassanein, 1997; Trauger et al. 2010).

While we know that women draw on communication networks for support (Hassanein, 1997; Hassanein, 1999), more research is needed to understand how these networks are maintained through communication, as well as the impact of these communication practices. The current study explores how women farmers maintain and use communication networks in agriculture. In addition to exploring their networking practices, we examine the value of these communication practices to women farmers’ resilience in complex, and often times, overlapping, economic, environmental, and social
systems. We aim to develop a set of recommendations related to how individual women farmers, as well as the formal organizations that serve them, can best support the persistence and resilience of women farmers. Our suggested practices will both support women farmers, and highlight the ways in which adequately supporting their communication practices can contribute to community and environmental resilience more generally.

3.3 Literature Review

3.1 Gender and Farming

While there is nothing “inherently female or male” about agricultural tasks, cultural and social formations deeply affect theoretical and realized positions of different genders in farming (Leckie, 1996, p. 310). In the United States, a long history of gender discrimination has shaped the position of women in agricultural contexts today. Traditionally, inheritance laws that pass land ownership from father to son maintained a system where most women entered farming through marriage to a farmer. In this arrangement, males had access to ownership and operation of the farm, while the woman typically lacked decision making authority. The Homestead Act of 1862 lifted prohibitive legal barriers to enable single women head of households to own land; however, internalizations of the women as farm wives persist (Horst & Marion, 2018).

Past research has demonstrated how the misunderstanding of women farmers’ contributions has led to their exclusion in agricultural information and knowledge exchange (Leckie, 1996; Trauger et al., 2008). For example, a young woman farmer in Ontario was “never taught to drive” because her town’s lack of recognition towards
women as legitimate farmers negatively affected the tasks her father perceived her to be capable of learning (Leckie, 1996). In this case, socially constructed ideas of women farmers turn into concrete outcomes, as women grow up to lack the full set of skills they need to participate in all agricultural tasks. Through processes like these, we see a perpetuation of normative gender roles in agriculture perpetuate.

On a larger scale, Trauger and colleagues (2008) argued that “long-held social constructions of women as farm wives or “bookkeepers’ rather than farmers or decision-makers influences the direction of most educational programming delivered through extension programs in land-grant universities in the United States” (p.432). Instead of helping women overcome constraints to participation, these institutions reproduce prohibitive barriers by failing to support women’s educational needs such as machinery training, a hands-on and interactive learning style, and space to ask questions openly and without concern for being perceived negatively by male farmers (Barbercheck et al., 2009; Brasier et al., 2009).

3.3.2 Women in Sustainable Agriculture

According to the US census of agriculture, women are three times as likely to operate farms practicing sustainable farming methods than traditional, conventional agriculture (Trauger, 2008). Sustainable agriculture is not immune to modern financial and environmental challenges in agriculture; however, participants seek to counter the problematic notions of industrial agriculture through an emphasis on norms such as decentralization, community, harmony with nature, and crop diversity (Beus & Dunlap, 1990). In these contexts, farmers highly value social relations and greater dialogue among
farmers to improve one’s farming knowledge and the collective experience of the farming community (Bell, 2010). While men still maintain some gendered identities on the farm, overall, success in sustainable agriculture requires an “altered social arena” that encourages openness and acceptance of all voices (Peter et al., 2000, p. 216).

Literature on women farmer’s role in sustainable agriculture is well-established (Chiappe & Flora, 1998; Sachs et al., 2016; Trauger, 2004; Trauger, 2008). Women’s farming practices within sustainable agriculture emphasize environmental and social well-being, as well as food quality, over agricultural intensification (Trauger, Sachs, Barbercheck, Brasier, Kiernan, 2010; Barbercheck, Brasier, Biernen, Sachs, & Trauger, 2014).

In recent work, The Rise of Women Farmers and Sustainable Farming, Sachs et al. (2016) introduce the Feminist Agrifood Systems Theory (FAST) as a tool to conceptualize women farmers’ role in sustainable farming systems in the Northeast. According to FAST, women in agriculture do not necessarily identify as feminists, but they do assert themselves as farmers, which, in itself challenges traditional patriarchal conceptions of farm compositions. Similarly, Trauger (2007) argued that women’s identities were central to their social identities within agriculture. Although “work roles of women in sustainable agriculture are similar to the work of women in conventional agriculture,” women identified as farmers within sustainable agriculture and as farmwives within conventional agriculture (p. 303).

While women’s work is more recognized and welcomed in sustainable agriculture, agricultural research, policies and organizations often overlook other forms of marginalization within sustainable agriculture. As women contend with barriers to
land, capital, credit and information, they have increasingly found their place in alternative agri-food movements that resist the rigid gender norms of conventional agriculture (Sachs et al., 2016; Trauger, 2004). However, the lessening of gender inequality within sustainable agriculture spaces does not dissolve steep economic and social barriers to participation (Pilgeram, 2019). Women are often able to overcome these challenges, but it is overwhelmingly those with the racial, ethnic, and socioeconomic status to do so (Pilgeram, 2019; Sachs et al., 2016). Therefore, alternative agricultural movements offer narrow opportunities for mobility, and exclude farmers whose identity intersects multiple forms of marginalization such as gender and race, sexuality, or socioeconomic status (Sochn, Leslie, & White, 2018; Leslie & Wypler, & Bell, 2019; Wyple, 2018).

FAST also describes women’s roles in agricultural organizations and associated networking structures. Because traditional means of organizing within agriculture, such as extension outreach efforts do not typically recognize women as farmers, women seek out alternative communities of practice. Communities of practice, unlike communities bound by geographic location or familial relationships, refer to groups of people who genuinely care about the same real-life problems or topics, and who interact regularly to learn together and from each other (Wenger et al., 2002). Sachs and colleagues’ (2016) FAST found that US women farmers use communities of practice associated with Women’s Agricultural Network or the Gender, Food and Agriculture. This component of FAST complements past research on unique behaviors in women farmers networking preferences (Hassanein, 1997; Trauger et al., 2010). However, according to Sachs and colleagues (2016), future research drawing on FAST should build on past research by
looking at how women’s networking practices evolve alongside their shifting roles in agriculture. This gap in the women farmer research parallels a need within communication literature. While communities of practice is a well-established area of study, more research is needed to understand the development and maintenance of these on-going organizing practices that allow groups to purposefully and spontaneously “think together” and talk about, cope with, and thrive within complex issues and challenging experiences (Pyrko, Dörlfer, & Eden, 2017, p. 390).

3.3.3 Resilience Communication

Buzzanell’s (2010) theory of resilience communication is a useful framework for understanding how women farmers build and maintain agricultural networks, as well as the ways their networking practices help to adapt and bounce forward after disruptions or amidst continued stressors (Buzzanell, 2010; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008; Houston, 2015, 2018). Resilience can be understood as an individual or groups’ ability to “bounce back” or reintegrate after a disturbance (Buzzanell, 2010; Manyena, Bernard, O’Keefe, & Rose, 2011). Early literature considered a “disturbance” to require a catastrophic event such as traumatic incidents of natural disaster and loss, but now scholars include “reoccurring and sometimes anticipated losses that disrupt and challenge everyday life” (Long et al. 2015, p. 67). Conceptions of resilience have since been extended to not only consider how those involved return to baseline, but how they adapt, or “bounce forward” through these challenges (Richardson, 2002; Manyena et al., 2011; Houston, 2015). The idea of “bouncing forward” views disaster as an opportunity for local livelihood enhancement rather than as a simple return to status quo ante (Manyena et al. 2011, p. 7).
Resilience as a communication process recognizes that resilience is not something that is achieved. Rather, it is a dynamic process that unfolds over time through the way people collaboratively make shared meaning of their experiences through discourse, interaction, and material consideration (Buzzanell, 2010). Buzzanell (2010) developed the foundational theory of resilience communication, which understands resilience as the culmination of five interactive processes: (a) crafting normalcy; (b) affirning identity anchors; (c) maintaining and using communication networks; (d) putting alternative logics to work; and (e) legitimizing negative feelings while foregrounding productive action.

![Diagram](image)

*Figure 2. Five processes of resilience communication (Buzzanell, 2010)*

Speaking directly to agricultural literature on the networking practices of women farmers, this study focuses on the third process of developing and using communication networks. Communication networks refer to individuals and organizations that are
connected through relationships and symbolic activity within a specific social context (Monge, Heiss, & Margolin, 2008). Communication networks can be used to obtain information, report, regulate, cooperate, or compete and a host of other possibilities. They are characterized by co-constructed norms and values that provide a framework for symbolic activities, such as goodwill, trust, reciprocity, or transitivity (Monge & Contractor, 2003). Sligo and Massey (2007) found that under conditions of increasing risk, farmers may feel a sense of shared adversity, which may enable higher levels of trust and social networking behavior.

The process of building and using communication networks is essential to resilience because it is through these processes that social capital is developed. Social capital represents “the resources accumulated through the relationships among people” (Coleman, 1988). Social capital can be developed in interpersonal relationships, including friends, colleagues, and more general contacts (Burt, 1997) and through larger formal or informal networks as norms and social trust that facilitate coordination and cooperation for mutual benefit (Putnam, 1995).

The social capital developed in communication networks can support business resiliency. For instance, communicative networks were essential for small businesses in New Orleans to reintegrate after Hurricane Katrina devastated the city in 2005 (Buzzanell, 2010). Kim, Longest, and Aldrich (2013) found that, for new business owners, relying on the social capital developed among their friends, family, and other business owners was a significant contributor to their success.

According to Buzzanell (2010), more research needs to examine the ways in which people maintain and use communication networks to be resilient. Recognizing that
women farmers face traditional financial and environmental stressors as well as adversity that is unique to their identity, this study aims to explore how women farmers maintain and use communication networks to be resilient. Specifically, we ask,

RQ 1. How do US women farmers maintain and use communication networks in their food systems?

With the goal of supporting resilient women farmers and food systems, we also ask:

RQ 2: What value do women farmers’ communication practices bring to the resilience of the US food system?

Examining the women farmers’ communication networking processes is an important way to contribute to our understanding of how to support women farmers’ practices. Further, because women are three times as likely to operate farms that practice sustainable agriculture (Trauger et al., 2008), better supporting women has benefits to local food and agriculture. We recognize that US women farmers have not had as much agency as they would like when it comes to accessing resources in agriculture. Using interviews with 35 US women farmers, this study seeks to highlight these women’s voices.

3.4 Methods

3.4.1 Recruitment Strategy

The sample used for this chapter was obtained from a larger set of interviews. Using a criterion sampling method (Lindlof & Taylor, 2011), interviewees were recruited from the six states with proportionally the most women farmers and proportionally the
least women farmers. As determined by preliminary analysis of the 2012 US Census of Agriculture, states with the highest proportion are Arizona (45%), Massachusetts (42%), New Hampshire (42%), Alaska (43%), Maine (41%), and Vermont (39%). Those states determined to have the lowest proportion of women farmers are Illinois (23%), Iowa (25%), Minnesota (26%), North Carolina (27%), Kentucky (18%), and Ohio (28%).

Working with an agricultural outreach specialist whose work focuses on women farmers, we identified key informants from each of these targeted states. These key informants, mostly agricultural extension agents, provided names and contact information for up to 15 women farmers in each of their respective states. My paper includes analysis of interviews from five states with the highest proportion of women farmers (Alaska, Maine, Massachusetts, New Hampshire, Vermont) and four with the lowest (Illinois, Iowa, Minnesota, North Carolina). A representation of sample states appears in Figure 3 below.

![Figure 3. Sample states for women farmer interviews.](image-url)
A team of 11 researchers used email communication to recruit women farmers within their assigned state. To participate, a person had to be 18 years or older, identify as a woman, and be the principal farm operator or a farmer when up to three operators were included per farm (per the USDA Census of Agriculture) for at least 6 months. Participants were offered a $50 incentive for their time and participation. All interviews were conducted over the phone and lasted 30-60 minutes.

3.4.2 Sampling

48% of the 60 women farmers interviewed were included in the analysis of this paper. To explore my research questions related to women farmers in sustainable agriculture, I analyzed the interviews conducted with all interviewees who identified as participating in sustainable agriculture. Identification was done through a demographic survey that asked interviewees about farming practices, types of products, and market channels for their products. The data set included interviews with 35 women farmers, ages 25-62 (M=41.7). Of the 35 interviewees included in this study, 85% are first generation farmers and 50% had off farm jobs. All of our interviewees were white. Many different farm types are represented and include diversified fruits and vegetables, dried beans, pasture-raised meat, poultry, dairy, flowers and medicinal herbs. Farmers typically sold their products through farmer’s markets, CSA, restaurants, and direct on farm sales. More details about study participants can be found in Table 1 below.
Table 1

Name and Farm Type for all Participant Farmers

<table>
<thead>
<tr>
<th>Farmer Name</th>
<th>Type of Farm</th>
<th>Age</th>
<th>Race</th>
<th>Years Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassi</td>
<td>Diversified vegetables</td>
<td>46</td>
<td>White</td>
<td>10</td>
</tr>
<tr>
<td>Lilly</td>
<td>Seeds</td>
<td>32</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Lala</td>
<td>Diversified Vegetables</td>
<td>61</td>
<td>White</td>
<td>38</td>
</tr>
<tr>
<td>Milly</td>
<td>Diversified vegetables, Poultry</td>
<td>61</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abby</td>
<td>Diversified vegetables, Poultry</td>
<td>43</td>
<td>White</td>
<td>3</td>
</tr>
<tr>
<td>Iowa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kelly</td>
<td>Diversified vegetables</td>
<td>32</td>
<td>White</td>
<td>10</td>
</tr>
<tr>
<td>Jenna</td>
<td>Diversified vegetables, Meat</td>
<td>32</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Meredith</td>
<td>Bison, Cattle</td>
<td>42</td>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Maine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Katy</td>
<td>Organic vegetables</td>
<td>59</td>
<td>White</td>
<td>48</td>
</tr>
<tr>
<td>Liz</td>
<td>Organic herbs, greens</td>
<td>45</td>
<td>White</td>
<td>23</td>
</tr>
<tr>
<td>Sarah</td>
<td>Vegetables and small fruits</td>
<td>60</td>
<td>White</td>
<td>29</td>
</tr>
<tr>
<td>Zara</td>
<td>Elderberry and Aronia</td>
<td>67</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Ella</td>
<td>Diversified meats and vegetables</td>
<td>39</td>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Tasha</td>
<td>Diversified vegetables</td>
<td>44</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Beth</td>
<td>Mixed organic vegetables</td>
<td>59</td>
<td>Declined</td>
<td>&gt;20</td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kathleen</td>
<td>Nuts, Diversified fruits</td>
<td>30</td>
<td>White</td>
<td>11</td>
</tr>
<tr>
<td>Maddy</td>
<td>Herbs</td>
<td>30</td>
<td>White</td>
<td>8</td>
</tr>
<tr>
<td>Nicole</td>
<td>Herbs</td>
<td>33</td>
<td>White</td>
<td>10</td>
</tr>
<tr>
<td>Lauren</td>
<td>Meat</td>
<td>36</td>
<td>White</td>
<td>25</td>
</tr>
<tr>
<td>Name</td>
<td>Farm Products</td>
<td>Age</td>
<td>Hair Color</td>
<td>Experience</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>Mary</td>
<td>Diversified vegetables, Flowers</td>
<td>56</td>
<td>White</td>
<td>15</td>
</tr>
<tr>
<td>Martha</td>
<td>Diversified vegetables</td>
<td>Over 50</td>
<td>White</td>
<td>3</td>
</tr>
<tr>
<td><strong>Minnesota</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erin</td>
<td>Flowers</td>
<td>25</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Shelby</td>
<td>Live goats, Goat cheese</td>
<td>31</td>
<td>White</td>
<td>30</td>
</tr>
<tr>
<td>Kara</td>
<td>Pork</td>
<td>34</td>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Jess</td>
<td>Diversified vegetables</td>
<td>45</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Brenda</td>
<td>Diversified fruits and vegetables, Poultry</td>
<td>62</td>
<td>White</td>
<td>11</td>
</tr>
<tr>
<td>Sheila</td>
<td>Dry beans, Flint Corn</td>
<td>62</td>
<td>White</td>
<td>13</td>
</tr>
<tr>
<td><strong>New Hampshire</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gabrielle</td>
<td>Diversified livestock and vegetables</td>
<td>44</td>
<td>White</td>
<td>5</td>
</tr>
<tr>
<td>Henrietta</td>
<td>Herbs and specialty crops</td>
<td>55</td>
<td>White</td>
<td>30</td>
</tr>
<tr>
<td>Margaret</td>
<td>Diversified meat and poultry</td>
<td>50</td>
<td>White</td>
<td>8</td>
</tr>
<tr>
<td>Rhonda</td>
<td>Goat products</td>
<td>48</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Susan</td>
<td>Sheep, chicken</td>
<td>69</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Dina</td>
<td>Diversified livestock and vegetables</td>
<td>25</td>
<td>White</td>
<td>5</td>
</tr>
<tr>
<td><strong>North Carolina</strong></td>
<td></td>
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<tr>
<td>Laura</td>
<td>Diversified vegetables, Flowers</td>
<td>27</td>
<td>White</td>
<td>5</td>
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<td>Daphne</td>
<td>Diversified vegetables</td>
<td>41</td>
<td>White</td>
<td>15</td>
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<td>45</td>
<td>White</td>
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<td>Diversified fruits and vegetables, Flowers</td>
<td>46</td>
<td>White</td>
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<td>Diversified fruits and vegetables</td>
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<td>23</td>
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<tr>
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<td>28</td>
<td>White</td>
<td>5</td>
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<td>Julia</td>
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<td>8</td>
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<tr>
<td>Sophie</td>
<td>Pork, Poultry</td>
<td>51</td>
<td>White</td>
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</table>
There is a lack of diversity in women farmer participants for this study. Specifically, all participants are white. The demographics of our sample are consistent with the US farm population, given that 95% of all women farm producers are white (USDA, 2019). This is a problematic statistic that this research does not attempt to dismiss, however, this context is important to include to understand why our research sample lacks heterogeneity. While this study intends to highlight the voices of women farmers, because of its focus on sustainable agriculture and farm operators, it does not address the broad diversity of women in the food chain. Future research should be designed to focus more attention on the intersection of gender, race, sexuality, and socioeconomic status within the food chain.

3.4.3 Interview Strategy

Semi-structured phone interviews were pre-scheduled and conducted over the phone and lasted 30-60 minutes. Interviews were conducted by 11 different researchers (including the author), who met weekly for 15 weeks to learn about issues surrounding women farmers, resiliency communication, and interview methods together. These researchers co-constructed the interview protocol.

The interviews contained eight questions, including moderately-closed and open-ended questions. As noted by Berg (2004), semi-structured interviews follow a preconceived interview script, but also give the interviewer “freedom to digress” to
explore emergent themes (p. 61). The interview questions were divided into two sections. The first two questions asked the farmer to identify the different formal and informal agricultural networks in which they participated. Based on those responses, we asked interviewees to think about the network with which they felt most connected. The next six questions focused on what the network said or did when responding to individual and collective challenges. Farmers were asked to recall instances when they felt others said or did things to help them or others in the community, as well as what the farmers themselves have said or done to help another person(s) in the network.

Researchers were trained to ask all eight questions, in the same order, and to probe around topics related to resilience, communication, and social support. As such, follow up questions and probes may have differed slightly based on variations in the interviewees’ responses. To perform a cohesive interview process across interviewers and probe in similar manners, the interviewers (including the author) reflected together in person twice a week about the content of the interviews throughout the five-week interview collection process. Emergent themes in the interviews and probing options, as well as problematic questions or wording, were discussed and revised as needed during these meetings.

3.4.4 Analysis Strategy

Interviews were transcribed verbatim using speechpad.com, an online transcription service. Transcripts were reviewed for accuracy. All farmers and farm names were changed to protect and maintain confidentiality.
We used constant comparative methods to inductively identify themes in the data. Constant comparative analysis is a cyclical and continuous method of processing, reducing, and explaining (Lindlof & Taylor, 2011). Researchers continually identify codes and themes within and across interviews as well as in comparison to the extant literature (Charmaz, 2005; Lindlof & Taylor 2011). Analysis calls for the continual refinement of themes as data is collected and formally analyzed through constant comparisons and recoding of the data set (Boeije, 2002).

To develop a holistic understanding of the data (Braun and Clarke, 2006), the author first read through an interview in its entirety without note taking. On the second reading, the author assigned open codes to every passage of the entire interview, only excluding introductory and concluding conversation that was not relevant to the interview protocol. According to Boeije (2002), open coding allows the researcher to label exactly what has been said in interviews, as well as observe consistently within each case. For both steps, printed hardcopies of interviews were used. At the end of each open coding, the author wrote and organized all codes on the back page to create axial codes that would allow for easy cross-case comparison. Axial coding involved “searching for indicators and characteristics for each concept in order to define that concept”, and is also used to “discover the combinations of codes which exist” (Boeije, 2002, p. 398). This process followed for each individual interview. As the author began coding numerous interviews, cross-case similarities, as well as similarities to published literature, began to emerge and codes were organized to reveal themes in the data (Braun & Clarke, 2006).

As the author began to collapse and organize codes, they imported interview transcripts into Nvivo. Commonly used in qualitative research, Nvivo is a data
management and analysis software that “provides a range of tools for handling rich data record and information about them for browsing and enriching text, coding it visually or at categories, annotating, and gaining accessed data records accurately and swiftly” (Richards, 1999, p.4). For this project, the bulk of the analysis was not done using Nvivo and the software was used primarily to store and access coded data. “Nodes” in Nvivo matches major themes that were emerging in the data set, and “subnotes” stored specific subthemes within these categories. Nvivo was used to further collapse and consolidate codes during the process, as it offered the opportunities to view similarly coded responses side by side. This iterative process continued until no new codes or themes emerged. The author used forceful and representative quotes from the interviews to represent the interviews’ unique voices and to support our claims as researchers (Owens, 1984)

3.5 Analysis

This study aimed to examine women farmers’ communication practices, as well as the value of these practices to their extended farming communities. Through analysis of 35 interviews with women farmers in sustainable agriculture, we found many ways that women farmers’ communication processes interact with and benefit farming communities of practice. Through participants’ stories, it was apparent that women were not only relying on other women farmers for support; many emphasized that they participated in coed networks and benefitted from interactions with both men and women farmers. In addition to gender, women farmers connected with others based on age, crop or livestock type, or farming experience. In this section, we present the ways that individual farmer, farm business, and community level resilience is developed and reified within women farmers’ communication networks.
3.5.1 Farmer Resilience

Many women farmers found that their communication networks developed and supported their personal resilience as farmers. Women reported that at times they were challenged by loneliness, feelings of self-doubt, and the complexities of balancing farm life with home life. Connecting to others provides critical support for enduring the day-to-day and more episodic emotional challenges of farming.

Women farmers reported seeking out and drawing on their existing communication networks to feel connected to others and for support with daily stress. Laura, a farmer in North Carolina in her late 20s, said “you’re at that low, low point, exhaustion and just like confusion. And, you know, you just need some reassurance that everything’s gonna be ok.” Laura continued to explain that “it’s just so uplifting being with people who know exactly what you’re going through, the good and the bad….it’s just the most healing I think.” Meredith, a cattle farmer from Iowa, 15 years her senior, described the emotional benefits of her network: “You know, we don’t have in common what livestock we’re raising,...It’s really kind of a therapy session, like ‘what’s new in your world?’ And whatever that person responds with it’s just a matter of kind of talking them through like, what they’re doing and you’re doing to just get by in this world really.” While there are no definite answers to the farm-related challenges, for Meredith and Laura, the fact that they are not alone changes the reality of their situation. Instead of feeling defeated, women farmers feel empowered to continue.

While some women reported feeling happy, or at least comforted, by interactions with communication networks more generally, many women mentioned feeling best
when interacting with specific sub-groups within their networks. For example, women farmers talked about the challenges of being a parent farmer. A mom and farmer from Illinois, Abby, says “we’re always talking about how we’re juggling being a mom and how she’s juggling her business, managing a crew, and managing customers.” Bonnie shared that she “commiserated with other growers via Instagram of just realizing that, you know, we weren’t the only ones that lost our whole strawberry crop because it was raining so much.” While Abby referred to connecting around stressors related to work-life balance, Bonnie explained how the support of peers was instrumental in her ability to cope and develop a resilience to adverse weather events. In addition to simply connecting around a shared experience, farmers found affinity groups, such as groups exclusively for goat farmers or elderberry growers, have functional benefits to providing support too. Maddy, an herb farmer in Massachusetts, said that “It feels really comforting to be able to talk about those struggles with other people who get it…You don’t have to spend a lot of time explaining or breaking down preconceived ideas.” Morgan, who grows fruit in Vermont, explained that, “It’s also really comforting to say, ‘Okay, we’re in the same boat here’. And then there’s like this collective push to figure it out. So, so much of farming is isolating.” Groups with similar experiences were sources of comfort because participants could commiserate quickly. Supporting the resilience of farmer’s emotional wellbeing was an unspoken value of the networks. As Morgan said,

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It’s nice to be able to have that interface where you can engage with people for both information but also the emotional piece, which is not obviously advertised, right? It’s not like ‘Hey, come here for emotional support.’ I think it’s something intentional that naturally occurs.
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Laura, a young farmer, felt particularly uplifted when a female peer of hers encouraged her to step in for a guest speaker at an event who did not show up, and felt especially encouraged because this peer had only ever met her once before. The peer expressed encouragement such as “‘do it’” and “‘I believe in you’”, which pushed Laura to sign up to talk about her farming experience at a conference in the future. She told me that this type of positive reinforcement from someone she is not particularly close to gave her hope that she was doing the right thing. Morgan and Laura’s comments highlight the complex nature of resilience. The need for and ability to offer emotional support were connected. Though these communication networks formed based on shared professions or common interest in a task, the networks also provided emotional support to contribute to the resilience of its members. While Morgan and Charlotte’s stories highlight a one-way exchange of support, other farmers’ stories demonstrate that resilience practices are complex processes. For example, Julia, an organic vegetable and egg producer in Vermont, highlighted the feeling of community that she gained from using mediated communication (communication over technology channels such as cell phone or computer) with other farmers. She explains, “It makes you feel like you’re a part of a bigger network and like there’s support out there. And you’re not doing it on your own, which is really important.” Similarly, Charlotte, a Vermont farmer, recounted how after her presentation at a meeting, fellow members of the community often reached out to her and “say ‘hey, by the way, that helped me’ or ‘I’m struggling too’ and hearing that was validating.” Julia and Charlotte’s stories demonstrate that providing support does not just help the resilience of the recipient(s) of the message. Rather, the source of the message
also builds their confidence and reifies their sense of resilience through their participation in the network.

3.5.2 Farm and Business Support

Seek and share information. The sharing of technical support and farmer to farmer information was central to women farmers’ networking practices in sustainable agriculture. For example, Bonnie, a farmer in North Carolina, hosted events to help new young woman farmers “start to feel like there’s more of a community group that each other can come to with, like, problems or anything else, friendship.” Lily, a woman farmer in Alaska, said that her Facebook seed group was able to “come up with constantly creative solutions from the advice they give others and learning about their space.” Describing similar conferences and workshops, Liz, a Maine organic vegetable farmer, said that “I think that [networking at conferences] greatly, greatly supports our resilience as farmers both relationally and technically… We’re always learning. We take away some gems from anytime we see another farmer, and we ask them a question.” These women’s experiences help to highlight how women farmers in a variety of geographic areas are using networking. In addition, they establish a norm of reciprocity that support communication networks and the participants’ resilience.

Because farmers do not go into an office every day and see other farmers, building and maintaining communication networks using communication technologies emerged as particularly useful for many women farmers. Karen explained that interactions within her communication network “feel really powerful to me and helpful, because, especially looking for information, you get a quick response to a question
especially if it has a time consideration.” For Karen, the ability to get information quickly from her online network was important because many of her concerns required timely responses. Tasha, a diversified crop farmer in Maine, said agricultural listservs provide a forum to ask questions on a variety of topics such as “insect control, or QuickBooks issues, or labor issues, and sometimes, like, a new tool or implement that somebody wanted to try and is asking if anybody has one to see what their opinion is on it.” Similarly, Charlotte, an organic farmer in Vermont, explained that “the hashtag capacity of Instagram enables me to be networked with everyone…and get a lot of information from farmers via that process.” For Tasha and Charlotte, mediated communication was valuable because it allowed them to access a variety of information more quickly and efficiently than they could do otherwise. Social media features, like hashtags, allowed them to refine the relevance of conversations within their networks further.

In addition to being able to access information quickly, women farmers reported using mediated communication networks to overcome challenges related to geographic space. Lilly, a woman farmer in Alaska, explained how mediated interactions allowed her interactions with other farmers to transcend the isolation of her rural setting. She explained that face-to-face communication was not a reliable source of support because there was not a “single person to ask in the surrounding area.” Instead, Lilly relied on social media platforms, such as Facebook, to connect with others and gain valuable information and technical support. Similarly, Daphne, an experienced woman farmer in North Carolina, said that there were not many small farmers in the region, and those that are there are very spread out. She goes to the potluck gatherings and conferences to “connect” with like-minded farmers and “questions across the board about all aspects of
farming.” Because these networking events included small groups of small-scale farmers in the region, Daphne felt as though the information and support exchanged during networking events among farmers working with similar agricultural challenges was unique and very helpful to her resilience.

In addition to gaining access to valuable information they would not have otherwise had easy access to, women farmers explained that communication networks provided them with critical spaces for collaborative problem solving and business practices. For example, sick animals are a major stressor to an animal farmer that demand quick responses. Email listservs were commonly used for solving problems related to animal health. Margaret, a New Hampshire poultry farmer spoke of using a listserv to diagnose illness in her chickens. “If my chicken is sick, you know, [I’ll ask] what does this look like? People are like, ‘oh it looks like bumble foot’… It’s very helpful, not just chit chatty.” Similarly, Susan, a shepherdess from New Hampshire, talked about how a grazers listserv helped her triage her animals. She said:

It could be, ‘I’ve got a weak lamb, I don’t know what’s wrong with it.’ And then they talk about white muscle disease and some professor somewhere will give you links to find out more about that. Or somebody will say, ‘Call a vet immediately. This is not something for the list.’

Both farmers found communication within their networks valuable because it helped them make sense of the problems and identify potential solutions. Susan’s comment is interesting because in her story someone said that the topic transcended the expertise of the network, so Susan should seek outside, expert help immediately. While
communication networks were helpful, to protect the resilience of participants, there were some boundaries the groups had to navigate. Participants are aware of the collective’s expertise and self-monitor information sharing to protect its individual members.

**Collaborative Practices.** In addition to benefiting as individual farmers from information sharing, women farmers and their farms drew on their communication networks to collaborate and coordinate. Many women farmers said that they shared business strategies and developed collaborative business practices within their communication networks. Betsy, a fruit and vegetable grower in North Carolina, said that farmers are “working together, and often will buy things together like fertilizer, soil or things where we can save money if we buy in bulk quantity.” Similarly, Julia told a similar story about her farm in Vermont, saying that multiple farms often placed orders together to save on shipping costs. It was also common for the networks to seek and offer help with labor-intensive tasks or in the wake of a natural disaster. Many women farmers participated in “barn-raising events” or got together to build hoop houses, where farmers provide snacks or a meal in return for help establishing these structures. Cassi, a vegetable farmer in Alaska, talked about a particular farmer in her area that needs 20,000 bulbs planted at her farm each fall. During this time, an informal network of farmers she built through a local Farmers’ Market coordinates to “go over there and just bang it out in one day.” Without the help of the people in her network, this work would have taken weeks. Getting the work completely quickly allowed Cassi to focus her attention to other areas of her farm. Owning and operating a farm involved financial uncertainty due to market challenges and difficult to anticipate externalities that affect yields. Collaboration and help, made possible by their communication networks, provided financial breaks that
were critical to the resilience women farmers and their farms. During times of crisis, on-farm help becomes more time-sensitive and heightens the need for efficient communication. Tasha talked about a time she received a message for help from another farmer via their local organic growers association after wind caused the plastic of a hoop house to blow off. As she recalled, “they emailed and said ‘Hey. I’m in a pinch right now. I need to get the plastic back on. Can you come help?’” In another interview, Erin from Minnesota recounts local farmers’ reactions to recent massive flooding on surrounding farms:

We were all trying to reach out to each other, mostly by text or email..., and just try and figure out how everyone was doing...‘How’s this person’s farm?’ How’s this person’s farm? So, we had this email thread of like, you know, ‘Erica’s farm, everything washed away. Can we try and get people over to, you know, replant, see what she needs?’

Tasha and Erin’s stories demonstrate how, when already established, women farmers can draw on their communication networks to support each other’s farm weather-related resilience.

Similar to identifying relevant information quickly, mediated communication within the networks proved an efficient way of identifying needs and organizing volunteers during times of crisis.
3.5.3 Resilient Communities of Practice

While networks directly supported women farmers and their businesses through sharing informational and collaborative practices, women also discussed the notion of wanting to do so to promote the values of sustainable agriculture. Specifically, women farmers reported that their mentoring and information sharing practices violated expectations that businesses should be competitive. Operating under norms and goals that violated the expectations of profit-oriented values, these farmers perceived their networks as strengthening the resilience of the sustainable agriculture community more generally.

Mentoring the next generation of farmers was an emerging theme within the stories of supporting the resilience of the sustainable agriculture community. Many women interviewed in the study valued farm models that provided opportunities for volunteers and mentorship. For example, some farmers worked on land that was designed to have older, more experienced mentors training new farmers. This was typically on a temporary basis, where farmers would eventually move on to acquire their own land. Cassi, a vegetable and poultry farmer, explained that the purpose of hosting volunteer and mentorships is “to help teach people, the next generation…. it doesn’t even matter what age group, help pass on knowledge that I have about how to farm, and just sort of inspire others on whatever scale.” On farm mentoring provided less experienced farmers with opportunities to learn skills and information needed to help their businesses and farms succeed. In addition to learning, mentorships and volunteering supported the resilience of farmers. Maddy, an herb farmer in Massachusetts, said she built lasting relationships with former employers and mentors who are still her “biggest source of support” today. For Maddy, the support helped her launch her farm business and keep it viable beyond the
initial startup. Helping less experience farmers was a means of increasing or maintaining the number of farmers in sustainable agriculture.

In addition to directly contributing to the resilience of individual newcomers, women farmers reported contributing to the resilience of the sustainable agriculture community by creating norms of support. As Morgan said in her interview, “I got advice from other people, so I feel obligated to say, ‘Okay, I’ll give you the 20 minute phone call and tell you what I’ve learned and what I’m learning.’ And it’s not always the most convenient, and sometimes it can feel burdensome. But once again, just giving back to the farmer to farmer model.” Morgan’s comment reflects how feeling supported by others encouraged her to pass on what she has received to others. Morgan and Cassi’s stories stress the importance of perpetuating farming knowledge for the continued support and growth of sustainable agriculture practices.

Many farmers’ stories emphasized the importance of information sharing within the greater farming communities. For example, many interviewees reported sharing business plans and marketing strategies, including names of local restaurants and markets well-suited for farm sales. Milly, an organic poultry farmer from Alaska, explained how communication within her network deviated from that which she experienced with male farmers. She explained:

Well, I think farmers sort of have always held their cards close to their chest, where they don't really wanna share too much information because it's seen as a competition kind of thing. But I think that's changing somewhat, and I do think that female farmers, at least in my experience, are more open to that sharing of
information, and not...and I don't know if it's just the Nature-nurture thing or what it is, women are just nicer than men, I don't know. But yeah, there does seem to be more willingness to sort of really invite people to come over and see what you're doing, and to help build...just because you're helping somebody else build up their farm, it helps you build up your farm. So it's not like, "If you're selling more produce, then I'm gonna sell less. "It’s, "If you're selling more, then I'm gonna sell more," because that increases sort of the public awareness of the whole thing. So I do think that female farmers are better at that than our male counterparts.

Jess, a vegetable grower from Minnesota who is fairly new to farming (6 years), used to feel uncomfortable asking for advice from a local farmer selling the same crop. “We’re such a competitive society,” she said, “you think, are they really gonna wanna give you advice when you’re like right down the road, and you’re trying to sell the same stuff?...Like, no. They’re fine with it. And then you try to pay it forward, too.” Milly and Jess’s experiences suggest that their communication networks prioritized the collective well-being of farm businesses, even at the cost of any individuals’ financial edge. Milly, unlike Jess, attributed this difference to the gendered identities of the participants. Both Jess and Milly recognize that their communication networks adopted practices that were in opposition to mainstream culture in the US, specifically, competitive business models. Both women suggest that the alternative forms of communication caused some initial uncertainty around asking for information or help. However, witnessing or experiencing norms of generosity and reciprocation within resilience communication seemed to ease those tensions and assimilate the women into the network. In other words, generosity within the group inspired other members to do or want to do likewise. Because members
of the group were contributing to each other’s individual resilience, each member could trust that their business’ resilience would be supported if threatened.

In addition to trusting that others would be supportive, some farmers suggested that openness and trust was important to support the resilience of the sustainable agriculture community in the face of a common opposition. Betsy, a farmer in North Carolina, explained it is in the best interest of participants to contribute to each other’s farm and business resilience because they are all trying to defend themselves against powerful competition. She explained, “it’s not really us [other farmers] we’re in competition with, we’re in competition with Walmart, and, you know, big grocery stores and stuff.” Charlotte, a farmer from Vermont, called it a “win-win-win” when you help other farmers. By this, Charlotte indicates that the benefits extend beyond her own economic well-being through practices that benefit the environment and simultaneously build resistance to organizations with competing ideologies.

The values of trust and sharing among farmers were common among interviewees, but not universal. Some women discussed tensions surrounding when, what, and how much to disclose to other farmers. These typically did not reflect the values of the participants themselves, but of nearby farmers they had interacted with. For example, Bernadette, a farmer in Massachusetts, mentioned “not everybody gives up their [growing] secrets.” Mary, also a farmer in Massachusetts, reported that she was willing to “share anything with anybody,” but some farmers “are kind of secretive and want to keep their knowledge to themselves because it may gain them something but I’m not really like that.” By emphasizing that they share information, but not everyone does, Bernadette and Mary’s comments reflect their network’s value of sharing. However, comments like
these are also important reminders that farmers participating in these networks have competing financial and social considerations that they must negotiate.

In addition to supporting the farm and business, our interviewees felt that their communication practices helped retain members of their farming communities. Julia, from Vermont, said the support provided in networks was particularly vital for new farmers. Julia explains, “There’s a lot of people who get into farming, and then after a few years, they quit for one reason or another. She explains there have been poor mental health issues and farmer retention issues in her farming community. In response, she says…We try to bring people, connect people together.” Similarly, Bonnie, a farmer in North Carolina, said that she hosted events to help new young woman farmers “start to feel like there’s more of a community group that each other can come to with, like, problems or anything else, friendship.” Both Julia and Bonnie described how, in addition to providing information and help with the farm business, the networks tried to help women farmers overcome physical and social isolation through community building activities. The assumption was that women farmers would stay in the profession longer and would have stronger mental health if they were in the community. This communication pattern reflects an unspoken responsibility of the group to protect the sustainable agricultural community as a whole by serving as the protectors of each other’s happiness and health. The community was responsible for the resilience of the community.

3.6 Discussion
From potlucks to social media discussions to workshops and formal networking events, women farmers found a variety of ways to build and maintain communication networks. These networks included both all women and coed groups, and women found support through interaction with men and women. Conversation within women farmers’ communication networks contributed to and reified the resilience of the individual farmers, their farm business, and the greater sustainable agriculture community. Women were able to build and maintain networks and support their resilience through seeking and sharing information and collaborative business practices on a daily basis. If networks were already in place, women farmers could also draw on their networks for quick and effective hands-on support during times of crisis.

3.6.1 Theoretical Implications

Our findings complement and contribute to resilience communication theorizing. Buzzanell (2010) theorizes that maintaining and using communication networks helps enable individuals to persevere either in response to catastrophic event, or in the face of consistent and recurring challenges. This study contributes to Buzzanell (2010) and provides deeper insight towards understanding the value of communication networks in maintaining resilience. Women farmers developed and maintained communication networks to support their resilience in sustainable agriculture. Farmers are typically either geographically isolated from their neighbors or, if not, their neighbors may not understand the unique challenges this population faces. Therefore, having someone close by to talk to and make sense of challenges is not always an option. Transcending time and geographic space, mediated forms of communication in these networks were critical to women farmers’ resilience.
Our findings also complement and contribute to Houston’s (2018) theory of community resilience. As Houston argued, a community of resilient individuals does not automatically constitute a resilient community. Rather, “dynamic interactions” make a collective of individuals a resilient whole (p. 21). We agree with Houston’s (2018) argument, the collective engagement of resilient women farmers contributes to and reifies the resilience of their larger network and sustainable agriculture community. Participants grew as they received and gave support. The giving and receiving of support had a generative effect, supporting the continued resilience practices of the group.

Our studies most valuable contribution to resilience theorizing is extending Houston’s (2018) argument to include communities of practice, not just communities of place. Instead of being motivated through shared connection to a local community, support within the communication networks was fostered through the shared goal of advancing the sustainable agriculture movement. Our findings are consistent with a study done by Hassanein and Kloppenburg (1995), which suggested that networks of information sharing propel the sustainable agriculture movement on dairy farms in Wisconsin. Our study advances this work by also exploring the dual benefits of communication networks on both the individual and broader community’s resilience. Future research should continue to explore how communities of practice in agriculture and other fields can foster resilience for members and the community.

Prior scholars have argued that farmers in sustainable agriculture operate within a separate paradigm; one that is concerned more about connecting to and protecting the earth than about money (Bell, 2010; Trauger et al., 2008). While women farmers emphasize norms of openness, generosity, and collaboration, we also identified counter
cases that suggest hesitation or an unwillingness to disclose techniques or engage in
dialogue with other farmers. Future research should examine how communication among
sustainable agriculture helps farmers make sense of this tension and the impact of that
sense making on farmer, farm business, and sustainable agriculture’s resilience.

3.6.2 Practical Implications

This study demonstrates how building and maintaining communication networks
contributes to women farmers and their greater community’s resilience. Women farmers
and professionals supporting women farmers should prioritize communication networks
by seeking ways to initiate and develop networks, as well as ways to foster access and
active engagement within the networks. In particular, interviewee stories highlighted
direct accommodations that relevant organizations could implement to increase farmer
participation:

1) Support informal networking events, as well as formal networking events.

Women farmers reported gaining information at formal events such as extension
workshops and conferences. However, informal networking activities, such as
social media activity or potlucks, provided space for information and resource
sharing as well as relationship building. Encourage relationship building and self-
organized activities that transcend the actual event and help build or maintain a
communication network.

2) Within networks of farmers, women reported that they found support through
interactions with all genders. This is important information for organizations to
know, as women were more likely to seek support from others based on similar experiences than by then by gender. They discussed seeking out other women when the challenges were related to being a women farmers, but given the frequency of crop, livestock, or financial challenges, women farmers were also seeking others with a similar farm or business type.

3) The findings of this study highlight the need for increased farmer access to communication technologies and wifi. For women farmers felt isolated due to geography or the nature of small-scale farm work, internet platforms such as email listsers and social media were critical for access recourses and support.. Policy makers and other organizations that advocate for farmers should note this importance. In addition to increasing access, educators can facilitate trainings on how to use communication technologies or the different types of support that can be provided. Future research should examine if farmers prefer organizations to host online networking activities or if they prefer to self-organize.

4) Interviewees provided positive feedback for on-farm mentoring models. Farms that encourages mentoring and hosting volunteers both increase the depth of learning for beginning farms, but forged strong bonds between multiple generations within agriculture. This is particularly important given that most farmers within this movement have been first generation.

3.6.3 Limitations and Future Research

Based on recruitment strategies for this project, it is likely that participant farmers are systematically more connected to agricultural networks than non-participants. Key
informants from each state were typically affiliated with their state’s extension or a local farming association. Therefore, farmers they identified for the study were ones they would know through these networks. By nature of being identifiable, we can assume that farmers have larger networks than their non-identifiable peers. Another reason participants may have been disproportionately engaged in social networks is that most were in their first ten years of farming. Over a quarter of farmers in the U.S. fall into this “beginning farmer” category (USDA, 2019), but as a population, this subgroup may be disproportionately more likely to tap into their support networks than their more seasoned peers because they have a smaller stock of knowledge for problem shooting.

Since all participants in this study are white, our analysis lacks the experiences and perspectives women of color who operate farms. While 95% of women farmers in the US are white (USDA, 2019), organizations should be careful not to assume it applies to all US women farmers. Future research should focus more attention toward the intersection of gender, race, sexuality, and socioeconomic status within the food chain.

Our findings are also limited in their ability to conceptualize resilience communication fully because all the interviewees were still participating in agriculture. They are practicing resilience of some form. The design of this study did not allow for the voices of those who had exited farming, by choice or otherwise. Future research should add to the richness of our findings by expanding the sample to hear why women farmers chose not to continue their participation and the support they did or did not find.

3.7 Conclusion
Women farmers’ numbers are continuing to increase, as well as their prominence in conversations within sustainable agriculture. This study highlighted the ways our interviewees used their communication practices within in-person and online forms of agriculture network to both maintain individual resilience as farmers, while collectively supporting the growth and interactive nature of the sustainable agriculture movement. The findings from this study and subsequent developments will help ensure continued support for these resilience processes.
References


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Chapter 4: Perceptions of Social Media Among US Women Farm Operators

4.1 Abstract

Women farmers make demonstrated contributions to the environmental, economic, and social well-being of rural communities. They have developed unique ways of accessing resources and support in response to exclusion from traditional forms of agricultural land, machinery, and knowledge. Social media has recently been characterized in research as a user friendly and accessible tool for small business viability. However, more research is needed that incorporates women farmers’ perspective on social media for accessing support that benefits themselves and their farms. Uses and Gratifications Theory suggests that individuals use media based on their perceived benefits of the platform. This article analyzes 42 semi-structured interviews with women farmers from 9 states on social media use related to their farming profession. Promoting women farmers’ success in agriculture not only increases gender equality in agricultural contexts, but will magnify the demonstrated contributions that women farmers make to the environmental, economic and social well-being of rural communities.

4.2 Introduction

Despite persistent barriers to land, capital, and knowledge in agricultural contexts (Leckie, 1996; Keller, 2014), the number of women farmers continues to rise in the United States. In the 2017 agricultural census, women farmers constituted 36% of total farmers, up 6% from just 5 years before (USDA, 2019). This increase is partly due to
more precise counting of women farmers; however, research shows that women farmers have developed effective strategies for remaining resilient in agricultural contexts (Sachs, Barbercheck, Braiser, Kiernan, & Terman, 2016; Hassenein, 1996).

Women typically own smaller farms, for less income, and are more likely to participate in farm models outside of conventional farming methods (Allen & Sachs, 2011; Sachs, 2016). These operations make important contributions to the strength of local food systems in rural communities. In fact, studies suggest that organized local food and agricultural systems adopting sustainable practices can bring an array of benefits to the environment, community wellbeing, and human health (Carlisle et al., 2019; Horrigan, Lawrence, Walker, 2002; Steele, 1997). In the 21st century, severely deteriorating economic and environmental conditions threaten the viability of U.S. small farms. In order to support both women farmers and the farms they operate, more research is needed to understand and support women farmers’ resiliency strategies in face of persistent environmental, economic, and gender constraints.

Social media is promoted as a user friendly and accessible tool for small business viability (Abrams, 2014; Jones, Borgman, & Ulusoy, 2015; Schaupp & Belanger, 2013). Small businesses are able to better connect with customers, inquire information from others with related practices, and promote other local businesses (Jones et al., 2015). Farm businesses have also been found to benefit from social media use (Abrams & Sackmans, 2014; Polanin et al., 2017). Yet, little is known about how women farmers use social media or their perceptions of the benefits associated with these platforms. This study will examine women farmers as a case study for understanding how potentially marginalized businesses owners build and maintain networks for resilience.
4.3 Literature Review

4.3.1 Women in Agriculture

When compared to men, women farmers today own smaller farms that have lower farm sales and farm incomes (Allen & Sachs, 2011). They are also more likely operate outside of conventional farming methods (Trauger, 2008; Trauger, Sachs, Barbercheck, Brasier, Kiernan, 2010). This reality is not due to inherent gender difference in farmer preferences or capability, but can be understood as the product of a long history of gender discrimination in farming.

In the United States, women farmers have long faced barriers to accessing agricultural land, credit, information, and property fitting machinery (Allen & Sachs, 2011; Keller, 2014; Leckie, 1996). Women farmers also subject to undue burden of household and childcare responsibilities that limit their time to learn all types of agricultural tasks and attend educational and training sessions (Allen & Sachs, 2011; Brasier et al., 2011). These factors have long shaped the representation of women as “farm wives” or “bookkeepers” on the farm, instead of adequate sources of agricultural knowledge (Shortall, 1996; Trauger et al., 2008).

The misconceptions of women farmers’ contributions further excluded their needs during the development of state and federal services meant to assist farmers. Ball (2014) argues that “economists researching women’s issues were not interested in agriculture because so few women were farmers and women were not of particular concern to rural development policymakers because so few farmers were women” (Ball, 2014, p. 593). One prolific source of exclusion from support for women farmers is in agricultural extension provided by land-grant University and agencies such as the USDA (Trauger et
These sources maintained gender barriers by failing to acknowledge the unique perspectives and needs of women farmers (Liepins & Schick, 1998). Research suggests that women farmers have responded to this exclusion by developing their own unique ways of exchanging agricultural knowledge (Hassanein, 1997; Trauger, 2004).

In addition to challenges related to their gender, all farmers must manage and cope with a range of challenges related to production, safety, finances, land use and weather. Small farms in particular confront extensive forces within the larger context of U.S. agriculture, where the dominant farming model is large-scale, commodity agriculture that promotes high production, uniformity and profit-maximization (Lyson & Guptill, 2004). Small farms face pressure to consolidate into larger operations to increase profit potential or risk losing the viability of their businesses. Extreme weather and climate events further exacerbate these risks and present a host of unpredictable variables to farms everywhere. Farmer stress, anxiety and depression have been linked to farmers’ feelings of financial stress (Brew, Inder, Allen, Thomas, & Kelly, 2016) and perceived risk of weather-related disasters (Berry, Hogan, Owen, Rickwood, & Fragar, 2011).

Despite these gender, economic and environmental challenges, the prevalence of women recognized and identifying as farmers continues to rise (Trauger 2008; USDA, 2019). Women farmers’ contributions are critical to recognize and support through policy and educational support, as they provide benefits to the economic, environmental, and social well-being of communities. Women are more likely to operate on farms using sustainable agricultural methods than conventional methods, they produce a large share of high-value and value added product, and they frequently engage in business models that prioritize community engagement such as community supported agriculture (CSA) or
agritourism operations (Ball, 2014; Jarocz, 2011; McGehee, Kim, & Jennings, 2007; Sachs et al., 2016; Trauger, 2004). More information is needed to help women farmers’ continued persistence in these agricultural spaces.

4.3.2 Women Farmers’ Social Networking

Buzzanell (2010) suggests that resilience is a dynamic process that unfolds over time through the way people collectively make shared meaning of their experiences and paths forward. The ability to maintain and use communication networks, as suggested in resilience communication theory, is a key process for the resilience of women farmers (Buzzanell, 2010). The existence of communication networks serve to increase one’s capacity for social networking and build social capital, which has been found to improve persistence and resilience during times of stress (Kim, Longest, & Aldrich, 2016). Under conditions of increasing risk, Sligo and Massey (2007) suggest that farmers may feel a sense of shared adversity, which may result in higher levels of trust and social networking behavior.

Women farmers rely on communication networks and social relationships to circumvent barriers to material and informational resources in agriculture (Hassenein, 1997; Trauger et al., 2009; Wypler, 2018). In response to their gendered experiences in farming, women have developed their own distinct ways of communicating support with other farmers that is different from male farmers (Hassenein, 1997). Hassenein (1997) argues that “different experiences in everyday life may create multiple and partial perspectives”, and that “the knowledge women exchange emerges not only from their
production activities, but from their experiences in a male-dominated industry (Hassenein, 1997, p. 256). In a study of women farmers in Pennsylvania, most preferred interactive learning, peer teaching, and opportunities to explore and hear from others based on lived experience (Barbercheck et al., 2009). Women farmers also reported that social networking is a critical source of empowerment through which they curb isolation, build shared trust, and exchange information about farming and products (Trauger et al., 2009). In order to support social networking practices, research must seek to better understand where and how women access this type of support.

4.3.3 The Role of Social Media in Small Business Resilience

Social media is a powerful communication platform for small businesses to promote their products and services (Hassan, Nadzim, & Shiratuddin, 2015; Jones, Borgman, & Ulusoy, 2015; Schaupp & Belanger, 2014). Platforms such as Instagram, Facebook and Twitter have been praised as an affordable way for businesses to develop relationships with customers, gain referrals, and increase profits (Jones, Borgmam, & Ulusoy, 2015; Schaupp & Belganger, 2014). For example, a study of Illinois farmers found that those who used online marketing tools such as blogs and newsletters had a higher level of social capital. In addition, farm Facebook friends and ‘likes’ were highly correlated with revenue for farmers. (Abrams & Sackman, 2014).

The communication networks that emerge through these platforms promote resilience for farmers and their businesses. In addition to driving profits through customer interactions, business owners can use social media to develop and maintain social capital within their local communities. Evidence suggests that social capital contributes to
success among small businesses. (Phua, Jin, & Kim, 2017). An analysis of Twitter and Facebook communication among farmers in New Zealand found that farmers frequently used social media as a platform for knowledge exchange and information sharing (Ciric, Kuzman, & Zekavia, 2018). Business owners have been found to use social media to provide aid and information particularly during times of disaster or hardship (Aldrich, 2010; Chamlee-Wright & Storr, 2011; Doerfel, Chewning, & Lai, 2013; Kim, Longest, & Aldrich, 2013; Torres & Marshall, 2015).

4.3.2 Uses and Gratifications

While social media has many desirable uses and outcomes for business owners, farmers, and business owners more generally, have varying uses and gratification with communication on the platforms (Ciric, Kuzman, & Zekavia, 2018). Uses and gratification is a valuable framework through which women farmers' social media communication can be better understood. Uses and gratification theory is a common psychological communication perspective that assumes that different people can use the same mass medium for very different purposes (Severin and Tankard, 1997). Individuals make choices and use media based on their access and perceived benefits of the platform. Media use and gratification is cyclical in nature; individuals who use and have positive experiences with a platform are more likely than those who did not to perceive the platform as being beneficial and will therefore be more likely to continue media use (Whiting & Williams, 2013).

Stafford, Stafford, and Schkade (2004) identify three potential types of uses and gratifications of internet use: content gratification, process gratification, and social
gratification. Users who experience content gratification are motivated by the pursuit of specific information, while process gratification users benefit from the enjoyment of using the sites. Finally, social gratification refers to the use of media for “interpersonal use and social networking” (Stafford et al., 2004, p. 268). Figure 4 illustrates the three categories below:

<table>
<thead>
<tr>
<th>Gratification</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Gratification</td>
<td>• Pursuit of specific information</td>
</tr>
<tr>
<td>Process Gratification</td>
<td>• Enjoyment of using the site</td>
</tr>
<tr>
<td>Social Gratification</td>
<td>• Interpersonal use and social media</td>
</tr>
</tbody>
</table>

Figure 4. Three types of gratifications adopted by Stafford et al (2004)

Gratifications may vary depending on the user’s end goals of social media use and will likely influence the platform they seek out. For example, college students in one study use Facebook mainly as a means to get away from responsibilities, express concern and friendship toward others, while they used Instant Messaging for more intimate conversation and individualized knowledge seeking (Quan-Haase & Young, 2010). Another study of college students applied uses and gratification theory to understand the ways social networking sites such as Facebook, Twitter, Instagram and Snapchat leads to higher social capital by “fostering systems of norms and reciprocity” that ultimately leads to positive social outcomes (Phua, Jin, Kim, 2017, p.121).

Uses and gratifications theory now drives the majority of research to understand social media use inside and outside of agricultural contexts. In agricultural contexts, uses
and gratification can be applied to understand how and why farmers may or may not utilize social media for support on their farms. For example, a recent study of farmers in New Zealand were found social media to be a space for like-minded individuals to have open conversation, share strategies, and acquire knowledge that may otherwise be unavailable in their immediate communities (Phillips, Klerkx, & McEntree, 2018).

Agricultural organizations have demonstrated interest in evaluating the benefits of online social networking to further supporting their missions of supporting women farmers (Melendez et al., 2015; Polanin et al., 2017). For example, a study in New Jersey assessed the impact of social media tools for networking after an online program offered through “Annie’s Project”, an organization that promotes education specifically for women. Polanin et al. (2017) found that participants continued to utilize social media for interaction with peers long after the session was over. However, adoption varied among different individuals and audiences and raised further questions about “adoption and use of modern technology” (Polanin et al., 2007, p. 40).

While researchers have identified different benefits and variances in usage, more research is needed to understand the farmers’ perceptions of the platforms, uses of the platforms, and perceived outcomes from communication on social media. Furthermore, it would be valuable to learn more about how women farmers, an underserved population of farmers, use social media. This information can increase the usefulness of trainings on the use of social media for farm businesses as well as more effectively disseminate information to those who seek it. Better understanding the relationship between social media and the persistence of women farmers will help maintain the positive impact of
small farms on local food systems and rural communities. In particular, this study explores the following research questions (RQ):

(1) How do women farmers use media to stay connected? and

(2) How do women farmers feel these platforms contribute to or hinder their persistence in their farm businesses?

4.4 Methods

4.4.1 Recruitment of Participants

Women farmers were recruited for this study from the six states with proportionally the most women farmers and proportionally the least women farmers. As determined by preliminary analysis of the 2012 US Census of Agriculture, states with the highest proportion are Arizona (45%), Massachusetts (42%), New Hampshire (42%), Alaska (43%), Maine (41%), and Vermont (39%). Those states determined to have the lowest proportion of women farmers are Illinois (23%), Iowa (25%), Minnesota (26%), North Carolina (27%), Kentucky (18%), and Ohio (28%). Our paper includes analysis of interviews from five states with the highest proportion of women farmers (Alaska, Massachusetts, New Hampshire, Vermont, Maine) and four with the lowest (Illinois, Iowa, Minnesota, North Carolina).
Figure 5. Sample states of study locations.

Farmers were identified and asked to participate in this study, in the Winter of 2019, by key informants in each of their respective states. Key informants were contacted and asked to assist with the study by the generosity of Mary Peabody of UVM extension, who is the founding program director of the Women’s Ag Network (WAgN). Each introduction was then followed up by a student in the Spring 2019 Qualitative Research Methods class at the University of Vermont (11 students total, including the first author). The second author instructed the course and guided student learning in qualitative research. Researchers asked informants for names of farmers who identify as women, are at least 18 years old, and are the principal farm operator or a farmer when up to three operators were included per farm (per the USDA Census of Agriculture). In some states, key informants provided a list of names and the researcher contacted the potential
participant. In other states, key informants facilitated the introduction between researcher and participant. Interested participants were asked to fill out an electronic demographic survey and schedule a phone interview. Table 2 presents an overview of participants included in this chapter.

Table 2

Name and Farm Type for all Farmers

<table>
<thead>
<tr>
<th>Farmer Name</th>
<th>Type of Farm</th>
<th>Age</th>
<th>Race</th>
<th>Years Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassi</td>
<td>Diversified vegetables</td>
<td>46</td>
<td>White</td>
<td>10</td>
</tr>
<tr>
<td>Lilly</td>
<td>Seeds</td>
<td>32</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Lala</td>
<td>Diversified Vegetables</td>
<td>61</td>
<td>White</td>
<td>38</td>
</tr>
<tr>
<td>Milly</td>
<td>Diversified vegetables, Poultry</td>
<td>61</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abby</td>
<td>Diversified vegetables, Poultry</td>
<td>43</td>
<td>White</td>
<td>3</td>
</tr>
<tr>
<td>Iowa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kelly</td>
<td>Diversified vegetables</td>
<td>32</td>
<td>White</td>
<td>10</td>
</tr>
<tr>
<td>Jenna</td>
<td>Diversified vegetables, Meat</td>
<td>32</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Meredith</td>
<td>Bison, Cattle</td>
<td>42</td>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Maine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Katy</td>
<td>Organic vegetables</td>
<td>59</td>
<td>White</td>
<td>48</td>
</tr>
<tr>
<td>Liz</td>
<td>Organic herbs, greens</td>
<td>45</td>
<td>White</td>
<td>23</td>
</tr>
<tr>
<td>Sarah</td>
<td>Vegetables and small fruits</td>
<td>60</td>
<td>White</td>
<td>29</td>
</tr>
<tr>
<td>Zara</td>
<td>Elderberry and Aronia</td>
<td>67</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Ella</td>
<td>Diversified meats and vegetables</td>
<td>39</td>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Tasha</td>
<td>Diversified vegetables</td>
<td>44</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Beth</td>
<td>Mixed organic vegetables</td>
<td>59</td>
<td>Declined</td>
<td>&gt;20</td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-----------------------</td>
<td>-----------------------------</td>
<td>-------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>Kathleen</td>
<td>Nuts, Diversified fruits</td>
<td>30</td>
<td>White</td>
<td>11</td>
</tr>
<tr>
<td>Maddy</td>
<td>Herbs</td>
<td>30</td>
<td>White</td>
<td>8</td>
</tr>
<tr>
<td>Nicole</td>
<td>Herbs</td>
<td>33</td>
<td>White</td>
<td>10</td>
</tr>
<tr>
<td>Lauren</td>
<td>Meat</td>
<td>36</td>
<td>White</td>
<td>25</td>
</tr>
<tr>
<td>Mary</td>
<td>Diversified vegetables, Flowers</td>
<td>56</td>
<td>White</td>
<td>15</td>
</tr>
<tr>
<td>Martha</td>
<td>Diversified vegetables</td>
<td>Over 50</td>
<td>White</td>
<td>3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Minnesota</th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Erin</td>
<td>Flowers</td>
<td>25</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Shelby</td>
<td>Live goats, Goat cheese</td>
<td>31</td>
<td>White</td>
<td>30</td>
</tr>
<tr>
<td>Kara</td>
<td>Pork</td>
<td>34</td>
<td>White</td>
<td>14</td>
</tr>
<tr>
<td>Jess</td>
<td>Diversified vegetables</td>
<td>45</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Brenda</td>
<td>Diversified fruits and vegetables, Poultry</td>
<td>62</td>
<td>White</td>
<td>11</td>
</tr>
<tr>
<td>Sheila</td>
<td>Dry beans, Flint Corn</td>
<td>62</td>
<td>White</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Hampshire</th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gabrielle</td>
<td>Diversified livestock and vegetables</td>
<td>44</td>
<td>White</td>
<td>5</td>
</tr>
<tr>
<td>Henrietta</td>
<td>Herbs and specialty crops</td>
<td>55</td>
<td>White</td>
<td>30</td>
</tr>
<tr>
<td>Margaret</td>
<td>Diversified meat and poultry</td>
<td>50</td>
<td>White</td>
<td>8</td>
</tr>
<tr>
<td>Rhonda</td>
<td>Goat products</td>
<td>48</td>
<td>White</td>
<td>6</td>
</tr>
<tr>
<td>Susan</td>
<td>Sheep, chicken</td>
<td>69</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Dina</td>
<td>Diversified livestock and vegetables</td>
<td>25</td>
<td>White</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>North Carolina</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Laura</td>
<td>Diversified vegetables, Flowers</td>
<td>27</td>
<td>White</td>
<td>5</td>
</tr>
<tr>
<td>Daphne</td>
<td>Diversified vegetables</td>
<td>41</td>
<td>White</td>
<td>15</td>
</tr>
<tr>
<td>Olivia</td>
<td>Diversified vegetables, Flowers</td>
<td>45</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Betsy</td>
<td>Diversified fruits and vegetables, Flowers</td>
<td>46</td>
<td>White</td>
<td>20</td>
</tr>
</tbody>
</table>
The 42 farmers who agreed to participate in this study represent a diversity of farm types and farming experience. Respondents ages ranged from 25 to 67 years and years of farming experience ranged from 3 to 40 years. Most participants were first generation farmers, and 13 participants had at least one child under the age of 17. The revenue generated and dependence on farming for livelihood among farmers varied as well. Approximately half of our sample of participants made at least 50% of their household income from their farm. 50% of women farmers had some form of off-farm employment, and of those that didn’t, 68% had a partner with an off-farm job. All interviews identified as white and non-ispanic or Latino, and one interviewee declined to report her race.

While this study refers to women as a uniquely situated group in US agriculture, it is important to mention that gender is not the only defining element in one’s identity. There are many other elements, such as race, socioeconomic status, or sexual orientation that deeply impact farming experiences. Crenshaw’s (1995) theory of intersectionality can help understand how farmers who experience multiple forms of marginalization face
compounded barriers to accessing certain positions in agricultural contexts. Such is the case for women principal operators in the United States. While the number of women principal operators is on the rise, it is still the case that all but 4% of these women are white (USDA, 2019). Therefore, all but one participant, who declined to report her race, are white, which allows for deeper examination into the perspective of this group, but must not be considered generalizable to all women farming populations within the United States.

4.4.2 Interview Procedures

The students of the Qualitative Research Methods course (including the first author) and the course instructor (second author) co-constructed the interview protocol. With the goal of better understanding how women farmers use social media for maintaining information and social support on their farms, this study’s interview protocol was organized into two sections. The first two questions asked the farmer to identify the different formal and informal agricultural networks in which they participated. Based on those responses, we asked interviewees to think about the network with which they felt most connected and how those networks used media to stay connected. The next six questions focused on what the network said or did when responding to individual and collective challenges. Farmers were asked to recall instances when they felt others said or did things to help them or others as well as to describe what they have said or done to help another person(s) in the network. All interviews took place over the telephone and lasted approximately 30-60 minutes.
4.4.3 Analysis Methods

Interviews were transcribed verbatim using speechpad.com, an online transcription service. Transcripts were reviewed for accuracy. All farmers and farm names were changed to protect and maintain confidentiality.

We used constant comparative methods to inductively identify themes in the data. Constant comparative analysis is a cyclical and continuous method of processing, reducing, and explaining (Lindlof & Taylor, 2011). Constant comparative methods recognizes that qualitative research is never purely inductive; indeed, our research questions and interpretations of the data are always embedded within our position in a given research topic and the external world. In the case of this study, researchers became familiar with empirical conceptualizations around resilience, women farmers, communication, and social support to provide informed contributions to the co-construction of the interview protocol.

To develop a holistic understanding of the data (Braun and Clarke, 2006), the author first read through an interview in its entirety without note taking. On the second reading, the author assigned open codes to every passage of the entire interview, only excluding introductory and concluding conversation that was not relevant to the interview protocol. According to Boeije (2002), open coding allows the researcher to label exactly what has been said in interviews, as well as observe consistently within each case. For both steps, printed hardcopies of interviews were used. At the end of each open coding, the author wrote and organized all codes on the back page to create axial codes that would allow for easy cross-case comparison. Axial coding involved “searching for indicators and characteristics for each concept in order to define that concept”, and is also
used to “discover the combinations of codes which exist” (Boejie, 2002, p. 398). This process followed for each individual interview. As the author began coding numerous interviews, cross-case similarities, as well as similarities to published literature, began to emerge and codes were organized to reveal themes in the data (Braun & Clarke, 2006).

As the author began to collapse and organize codes, they imported interview transcripts into Nvivo. Commonly used in qualitative research, Nvivo is a data management and analysis software that “provides a range of tools for handling rich data record and information about them for browsing and enriching text, coding it visually or at categories, annotating, and gaining accessed data records accurately and swiftly” (Richards, 1999, p.4). For this project, the bulk of the analysis was not done using Nvivo and the software was used primarily to store and access coded data. “Nodes” in Nvivo matches major themes that were emerging in the data set, and “subnotes” stored specific subthemes within these categories. Nvivo was used to further collapse and consolidate codes during the process, as it offered the opportunities to view similarly coded responses side by side. This iterative process continued until no new codes or themes emerged. The author used forceful and representative quotes from the interviews to represent the interviews’ unique voices and to support our claims as researchers (Owens, 1984)

This iterative process continued until no new codes or themes emerged. The first author drafted the manuscript while the second author provided weekly mentorship on qualitative methods and multiple rounds of edits to the manuscript. We used forceful and representative quotes from the interviews to represent the interviews’ unique voices and to support our claims as researchers (Owens, 1984)
4.5 Analysis

With the goal of increasing our understanding of women farmers’ communication practices and supporting their resilience in the food system, this study examined how women principal operators in the United use social media to maintain resilience in both their identities as farmers and the viability of their farm businesses. While the term “social media” can span far and wide to include blogs, newsletters, and YouTube, this analysis focuses on Facebook and Instagram as major platforms of social media, as those were the ones that came up in interviews. Facebook is an online social networking site where individuals, organizations, or businesses can create an online profile through which they share photos, thoughts, or respond to others’ photos or comments. Instagram is an online photo-sharing platform that allows users to post captioned photos, post live stories, as well as follow and comment on others’ accounts/photos.

An analysis of interviews demonstrated that women farmers who participated in the study had varying uses and perspectives on social media. Specifically, participants reported using social media to reach customers, exchange information, and provide social support. Farmers’ satisfaction with these forms of communication on different social media platforms varied.

4.5.1 Social Media to Reach Customers

Women farmers in our study consistently praised the ability of social media to interact with and make connections to customers. Zara, an elderberry farmer in Maine, says “Facebook is a major part of [her] business model” and that it is how she gains many of her customers and sales. Brenda, a diversified vegetable and livestock farmer in
Minnesota, also feels her blog and Facebook page, as well as her website, have been “invaluable for marketing her farm and building”. She continued, “...on occasion, someone will just drive into our yard and say... “I’m in Minnesota from West Virginia, and I read your blog. And, so, when I came here, I wanted to come to your farm.” In this example, Brenda’s blog and Facebook page allowed her to make strong connections to sales potentials with customers outside of her immediate community. In small towns, being able to expand your customer base is crucial for maintaining viable businesses. Lala, a diversified vegetable farmers in Alaska, says it is necessary for gaining customers. Even though she is “happiest with her hands in the dirt” and does not enjoy the energy it takes to sell, she says,

“a successful farmer is going to understand that basically, you’re growing for your customers. You’re not growing just to improve the soil and to make, you know, beautiful, delicious food. If you don’t have someone to feed it to, there’s no direct purpose. And, so, that’s the importance of technology to the farmer.”

Lala had previously mentioned in the interview that she didn’t find social media to be an effective tool for her farm. However, even she recognizes the necessity of the platform for marketing purposes. In each of these examples, being an online presence in order to build social connection was critical for acquiring the customers and sales farmers needed to maintain viable business models.

For others, social media was less about gaining new customers or promoting products, and more about developing authentic connections with their existing clientele. These participants sought to portray a story of their farm through their posts. For
example, Julia, a diversified vegetable and egg farmer in Vermont, says Instagram is “not really marketing...it is a way to create a story about our farm and our life as farmers.” She continues to explain how there are many messages she hopes to send through her social media presence: “I want wannabe farmers to like us so that maybe they’ll work for us. I want local people to like us so that maybe they will buy from us. And I want other farmers to like us so that we can collaborate or information-share.” Abby, a vegetable and chicken farmer in Illinois also discussed posting on Instagram for story-telling purposes. She said she “takes pictures from things that are growing in the field or a team that’s working in the field, just [to] kind of keep people up to date on what’s going on at the farm so customers can feel connected.” These participants had an important take on marketing as they were not directly trying to promote products to their customers, but instead focused on developing loyalty from their customers by sharing a piece of their farms’ day to day experiences. This Morgan, a fruit and flower farmer in Vermont, also uses social media for this purpose. She says she tries to post often to allow current and potential customers to learn more about her farm. She says, “I’ll come across folks that I know are followers on Instagram. And a month later, they’ll be like, “I’ve been thinking about your chicken, how is she?” Again, these examples suggest women farmers appreciate that social media allows them to be a bigger part of their customer’s lives. Similar to Morgan’s chicken, Brenda’s cow has become a central focus in her farm’s online presence. “My milk cow, Linda, she has her own Facebook page and she has a huge following. She died a year ago but she was, like, kind of the face of our farm and she inspired a lot of artists.” In addition to her cow’s Facebook page, Brenda keeps a blog that documents her venture into farming with no previous farming skills. Through social
media, Julia, Abby, and Morgan stories all create an online identity that helps customers feel as if they know and can connect with the people behind the products that they sell.

4.5.2 Social Media for Information Seeking

In addition to marketing their services to external audiences, women farmers perceived social media as a useful platform for sharing information among farmers. Lilly, a seed farmer in Alaska, says Instagram is “a pretty huge connection point...it’s kind of a fast and instant way to be like, ‘Hey, how did you set up that high tunnel?’ or ‘Oh, how are you guys harvesting that seed?’” Before social media, Lilly may have had to bring those questions to her local extension professional or endure the trial and error method. Instead, Lilly used and appreciated Instagram’s capacity to efficiently gather information in order to perform tasks on her farm. However, Lilly did admit some problems with the platform. She explained “And, it’s not the most long-standing resource or the most, I guess, comprehensive, but it is a pretty instant way to see what other people are up to and get that sort of information.” Despite some limitations, for Lilly, the speed with which she could gather information, or content, was a primary reason for using Instagram.

Similar to the hashtag function on Instagram, Erin, a flower grower in Minnesota, likes that you can search back on Facebook posts to see if someone has already posed the same question you have. The same she gave dealt with planting Larkspur on her farm. She says "when I have really specific questions, there’s a flower farmers Facebook group that I’ll reference. So, if I’m like, ‘Hey, how do it plant Larkspur?...I can go onto this Facebook group and type in ‘Larkspur.’” The rest of Erin’s story discussed how this post search eventually led her to suggestions for growing. While Lilly and Erin referred to different
social media platforms, both emphasized the ability to save time through searches on these tools.

Along with quick methods of information gathering, it can also provide an efficient form of validation when there is perhaps no clear answer to a problem. Danielle, a flower farmer in Massachusetts, valued her flower farmers Facebook group for this reason. Her story describes a different form of content gratifications: “sometimes I ask questions that I have searched and searched and searched, can’t find an answer to, so I post there, and you know, I guess there’s a reason why I couldn’t find the answer, because nobody knows.” Danielle’s search did not lead her to solutions like Lilly or Erin’s, but it still saved her time researching tips for her question when she learned there were no answers out there for her problem yet.

While the speed of information seeking was valued by some farmers, other farmers found social media’s ability to transcend geographic space to be important. Charlotte, a diversified vegetable and livestock farmer in Vermont, explained that Instagram is a useful platform for information exchange. For her, the hashtag capacity of Instagram is an invaluable feature that helped her find others who also raise pigs, regardless of their location. Lilly, a farmer in rural Alaska, explained that rural locations limited the options for farmers, and she views social media as a “main connection tool” for her to find others with similar expertise. Meredith, a bison and cattle farmer in Iowa, also appreciated the ability for social media to transcend space, and particularly liked that it helped her feel connected to other women farmers She says “when you get on Facebook, it’s not about people you know, but [people] you should be really touching base with.” Meredith valued the chance to hear other women talking about farming and
said she often feels like an “oddball” outside of that space… “Within my role in the community, I’m an oddball. And within the bison industry, I’m kind of an oddball.” Whether it was because of the type of farm, geographic location, or gender, these stories represent the ability for social media to build a sense of connection among otherwise disconnected farmers that can provide both content and social benefits.

4.5.3 Social Media for Emotional Connection

While information sharing dominated women famers’ talk about how social media improved farmer-to-farmer communication, women farmers also mentioned that these platforms included social support messages. However, the variance with which participants found these messages to be useful varied greater than when they discussed information sharing or marketing tasks on these platforms.

Some interviewees found social connection to be a critical benefit of social media use. Abby, an organic veggie and poultry farmer in Illinois, said she began following groups on social media because she saw them as places for “celebrating people’s successes,” such as being published in an article or starting a new project. Others found it inspiring to follow each other’s progress on their farms. Karen in Massachusetts says that “it’s like ‘Oh, wow. Look, it’s 30 miles south of us. It’s a couple weeks ahead of us,’ and ‘Wow, they’re planting that thing that I’m planning to plant in two weeks, so I must be on target,’ you know, that kind of...reassurance. Plus, by appreciating each other’s posts, sometimes, it’s...just like a little cheer, or pep talk, or something. Go for it, you know?” Karen’s example speaks directly to emotional support because she does not necessarily get tangible information from help from others that send her messages, but they elicit a feeling of determination and confidence that directly benefits her work. In both of these
examples, small gestures from other farms’ social media profiles gave Abby and Karen
the encouragement to continue.

In addition to celebrating, participants connected over shared struggles in the
farming community. Abby described a trending hashtag on Instagram that showed
failures happening on farms: “We all have them, and we all make mistakes. ‘And so, let’s
show the failures so that we can all feel like we’re human.’” Abby and others raise the
point that on social media you only see farmers as they choose to represent themselves.
This can create further isolation because you start to believe you are alone in the
struggles on your farm, as if others are not experiencing them as well. Abby continues, “I
did a post using that hashtag...I think most farmers feel like we have to show the beauty,
because we’re surrounded by it, but I do think that it really grounds us when you show
the failures or the struggles.” The process of expressing these struggles provided relief to
Abby. Olivia, a diversified vegetable and flower grower in North Carolina, had similar
comments about showing struggle. She found commiserating with others via Instagram
posts to be helpful: “when everyone’s just posting how beautiful everything is,…,I’m like
‘Yeah, that’s not really the case,’ so I appreciate it when we all get real and just like,
‘Wow, my fields are totally flooded or my greenhouse just collapsed under the snow and
this is pretty sucky”. Laura, a vegetable grower in North Carolina, calls Instagram her
“public journal”; a way for her to “share how I’m feeling deeply, because I know that
there are other people out there who are feeling that same way [about their farming
struggles] and they’re just afraid to talk about it or they feel alone.” Laura says that the
emotional benefits Instagram provided was more important to her than the transfer of
technical farming information, which she also sees a lot of on Instagram. During the low,
isolated moments of farming, Abby, Laura and Olivia remained resilient through connecting online over their shared struggles.

While participants said that messages intended to provide relational or emotional support were commonly exchanged on social media platforms, not every person said they engage in that type of message exchange. For example, Lala, a diversified vegetable farmer in Alaska, expressed concerns that it takes away from time out in the field “doing the groundwork.” To honor their prioritization of productivity on the farm, participants that did not find social media useful had to determine which content was more or less valuable. Lala accepted that social media was necessary for marketing, though it “does nothing for the earthworm.” These farmers engaged in information and task based conversations and avoided relational or emotional conversations—even those related directly to completing tasks. For instance, Karen explained that the Facebook groups she participates in have a mix of conversations she considered useful and “clowning around.” She explained, “I’m in [the group] for, I wanna learn about this thing, you know? … sometimes, someone will post something and some of the responses are really straightforward, and some of them are just kind of goofball.” Karen used social media to get information about her farm practice; therefore, she valued messages that were task or information focused. Liz, an organic vegetable and seedling farmer in Maine, felt particularly strong about this topic. She said she has “zero room [in her day] for conversing online.” She uses the internet for “reading articles and educating” herself, but, aside from advertising to customers, Liz says “Facebook is practically zero support in terms of my resilience.” Lala, Karen and Liz’s comments suggest that not everyone views
emotional support through social media platforms as a positive contribution to their persistence as farmers.

In addition to evaluating usefulness of replies to determine social media engagement, others monitored their commenting behaviors. Lilly, an Alaskan farmer, tried to minimize others’ time wasted reading through what she perceived as unhelpful posts. She did this by making her responses “quantitative.” By this, Lilly means providing answers that give other farmers responses that will help them solve problems, instead of a response like “Oh, do your best, you’re doing great.” This is an interesting point because other farmers valued and felt motivated by the type of supportive message she viewed as unhelpful. Lilly’s comment reflects how her social media usage corresponds to her perceptions of the media’s benefit. For Lilly, sharing task or information related information was a good use of her time because she saw it directly helping a persons’ farm business in a way that minimized distraction from her farm. While Lilly presents an example of the way she gives support and Karen is referring to support she receives, in both cases, interviewees were clear that they prefer to exchange technical information online over relational support.

4.6 Discussion

This study aimed to understand women farmers’ motivations and perceptions around social media use. Overall, interviewees saw many benefits to the use of social media for information support and connecting to customers. Social media was easy to access for many participants. It allowed for efficient exchange of information and was viewed as necessary for gaining and retaining a customer base. However, participants had
mixed feelings about the usefulness of social media for social support and authentic connection with others, as well as its efficiency as a tool for farmers.

4.6.1 Theoretical Implications:

The analysis of our interview data both benefits from and contributes to uses and gratification theory. As the theory suggests, farmers pursued social media in ways they found most useful to them, and felt most discouraged by social media when it did not allow them to easily achieve their end goal. Content gratification drove much of our participants’ motivation around social media use; farmers experienced positive benefits from using social media for efficient access to information. Farmers mostly discussed gathering information related to farm issues such as disease, pests, and technical information, as well as marketing strategies.

Social gratification also was perceived as beneficial to many of our women farmers in two ways. First, interviewees felt that their businesses benefitted through developing relationships with their customers via social media. In particular, many farmers discussed storytelling on social media as a method to build customer loyalty. The stories provided in our results emphasize that marketing is not only restricted to advertising and promoting products. The second form of social gratification that emerged in our analysis was the exchange of social support among farmers. Whether it was sharing celebration, sharing struggles, or sharing the commonality of being a women farmer, many interviewees felt a sense of motivation by exchanging messages with others. However, the perceived emotional benefits were varied among our population and suggest that social gratification as a driver of social media use is not a given among
women farmers. Some farmers believe the benefits to social media that others may experience do not outweigh the costs of time lost outside working in the field. This raises important questions around isolation, farming, and resilience. If farmers purposefully avoid messages that relate to relationship building and emotional encouragement in order to protect their productivity, how does this impact individual resilience?

The third gratification, process gratification emerged in unique ways that further complicates the uses and gratification theory. The use of social media for pure enjoyment of the process was largely undiscussed by interviewees in this study. This finding is not surprising considering that farm-work, especially when coupled with marketing and sales efforts, require extensive time and attention. Thus, farmers pursue social media usage in the ways that feel most useful to them for their needs, which excludes perusing and reading social media for the enjoyment of the activity. However, the storytelling component of social media, which contributed to customer retention and loyalty on farms, also served a dual purpose as a performance of identity for women farmers. Traditionally, women have struggled to legitimize themselves as farmers (Keller, 2014; Leckie, 1996). The stories of farmer identity performance via social media is a powerful finding and enriches conceptualizations of process gratification.

4.6.2 Practical Implications:

Our results offer insight into perspectives on social media use by women farmers, which will be valuable to organizations and policy-makers that support women’s farm businesses. As our analysis suggests, social media supports farmers’ resilience in a multitude of ways: by providing farming-related knowledge, by serving as a platform for
connecting with and marketing to customers, and by providing emotional support through the shared struggles of farming. However, our results also underscore that these experiences are complex and varying. Therefore, organizations should be wary of promoting social media as a one size fits all tool.

The aspects of social media that farmers view as beneficial or consequential to their farm operations may greatly influence their openness to receiving training for the tool. For example, there was consensus among farmer participants that, whether they used it or not, there were benefits to using social media for marketing to customers. Providing more training related to this skill may help farmers attract and retain customers and increase sales on their farms. Based on results and implications of the uses and gratifications theory, farmers may be most receptive to these type of educational trainings.

On the contrary, farmer’s perspective on using social media for informational and emotional support varies greatly from farmer to farmer and their previous experiences may influence likelihood of continued use. If a farmer does not use social media for emotional support, they may become frustrated by trainings that assume or suggest they do. One solution to this challenge may be to develop social media groups that are explicit about their intentions and allow farmers to decide for themselves if it will be useful to them.

4.6.3 Limitations and Future Research

Our findings offer critical insight into farmers’ perspectives on social media use. In particular, the dual purpose of story-telling marketing and identify performance was a
compelling and unanticipated use of social media. Further research should look further into this practice within social media use.

Another research finding that calls for future investigation is the bifurcation of farmers who seek information support and farmers who seek emotional support. Both practices face trade-offs; those seeking information support sacrifice connection in an otherwise isolated profession, and those seeking personal connection sacrifice time dedicated to tangible productivity. Future research questions may seek to identify the relationship between these trade-offs and farmers individual resilience.

This study was limited in its ability to represent all women farmers’ voices due to a lack of diversity in our sample. Women in this study were either principal farm operators or operators when four or less were counted on the farm. Due to increased exclusion of women who lie at the intersection of multiple element of marginalized identities (Crenshaw, 1995), such as race and gender, 95% of women principal operators are white (USDA, 2019). Future research should widen its sample population to those in other positions on farms, such as farm laborers, to understand how women of color use social media as a form of resilience communication.

4.7 Conclusion

Farmers and small farm operations in the U.S. today face an uphill battle of enduring environmental and economic challenges; yet, women farmers have always shown persistence in face of enduring gender-related challenges. The resilient practices that women utilize on their farms are critical to support in order to benefit the well-being of farmers, prevalence of small farms, and rural communities alike. In an era of social
media boom, this study provided relevant and timely information about social media’s contributions to women farmers’ resilience practices. Continued research and support will continue to inform organizations and online communities that facilitate the continuation of these practices.
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Chapter 5: Conclusions and Future Research

5.1 Discussion

Gender barriers that women farmers’ face in agriculture have been increasingly studied (Brant, 2006; Contzen & Forney, 2017; Leckie, 1996; Keller, 2014), but the resilience strategies they enact to cope with these stressors have not. My project aimed to better understand the resources and discourses women farms utilize to persist on their farms. This thesis uses data from semi-structured interviews with 42 women farmers in nine states to explore how women farmers use communication networks for support on their farms.

Drawing on responses to interviews, in chapter 3, I argue that communication networking is valuable to food systems. Specifically, these practices contributed to and reified the resilience of the individual women farmers, their farm business, and the greater sustainable agriculture community. Extending beyond geographically-oriented communities, this chapter expands resilience communication theorizing into the area of communities of practice.

In chapter 4, I examine women farmers’ perceptions of the Internet and social media use and contributions to their ongoing resilience. Results seek to increase knowledge of women farmers’ preferred networking practices, in order to better facilitate and support women’s persistence in food systems contexts. Drawing on the findings presented in Chapters 3 and 4, this chapter discusses the theoretical and practical implications for women farmers, as well as the limitations of the study and directions for future research.
5.1.1 Theoretical Contributions

The results of this thesis contribute to, complicate, and challenge the current literature related to women in agriculture and resilience communication. Given that women farmers predominantly exist on farms using sustainable agricultural methods, I used literature on paradigms within sustainable agriculture to understand more specifically the constraints that bear down on women farmers within these spaces. This study picks up and builds upon older, but highly relevant work by Neva Hassanein (1995, 1997, 1999) to understand the gendering of knowledge exchange and networking within sustainable agriculture. My focus on exchange through the internet and social media was informed by Carrie Putsch’s (2018) Masters’ project in the UVM Food Systems program, which found women rely on the internet to connect with and exchange support with other women farmers.

My analysis process was complicated by the fact that most of this study’s interviewees did not always specifically seek out other women. In fact, many women were adamant about the fact that their communication practices and support systems were no different. Yet, women also discussed reaching out to their support networks for challenges that were gender-specific, such as juggling childcare or feeling like an “oddball” in their community. These findings reinforce that, while women’s experiences in agriculture still appear gendered, they are increasingly viewing their needs and capabilities as equally legitimate to men farmers.
Patrice Buzzanell’s (2010) theory of resilience communication proved to be a valuable framework to understand the importance of communication networks for any group that experiences either disaster or ongoing hardship. My project drew original connections between resilience communication theory, communities of practice, and women farmers’ resilience in sustainable agriculture. By applying Buzzanell’s (2010) third process of building and maintaining communication networks as a pillar of resilience, we are able to begin to fill in conceptual gaps in our understanding of how women farmers’ presence in farming continues to rise given the gender, environmental, and economic adversities they face.

In article one, we were interested in a more broad perspective on communication networks; specifically, who is a part of these communication networks, where they occur, and their value in food systems contexts. This study found that women found a variety of ways to build and maintain communication networks, such as potlucks, farmers’ markets, on-farm tours, and social media. The main contribution of this paper was to communication resilience theorizing. My findings suggest that resilience communication can extend beyond the bound of geographic community and be maintained over mediated forms of communication among communities of practice. This is not a new concept in sustainable agriculture; literature has long argued for the dialogic nature of extended farming communities. However, resilience communication theory is a new framework and had previously been used only to address discourse among individuals or groups in close proximity to one another.

Both of our articles complement and complicate Putscher’s (2018) preliminary suggestion that the internet is an essential medium for the development and maintenance
of communication networks. In Chapter 4, I applied uses and gratification theory to understand how women farmers may choose to use social media platforms for this purpose. My findings suggest that even seemingly similar individuals have varying experiences and preferences for media use. Farmers also tended to use social media as a platform for identity performance, which suggests a new overlap between process and social gratification. Women farmers felt social media gave them a platform for legitimacy by posting about both the mundane and eventful moments on their farms. This provided a form of emotional support for women farmers, however, to do so required an online social network of others in order to perform them.

Some women farmers’ stark opposition to either emotional or informational support via internet raises an important point that there are tradeoffs in resilience, which is perhaps one of this study’s most important contributions. The resilience of one’s identity as a farmer, the resilience of one’s crops or livestock, and the resilience of one’s farm businesses all require specific knowledge networks and support systems. Women farmers in this study used communication networks to contribute to all three; however, this required conscious decisions about how they prioritize their time and needs. Research should continue to explore this, especially considering issues of isolation within the farming community.

5.1.2 Practical Implications

Chapter 3 of my thesis provides useful information about knowledge exchange and support among women in sustainable agriculture. It is useful to know that women farmers appreciate and respond well to social opportunities such as potlucks, on-farm
tours, and mentorship collaborations for new farmers. These findings agree with the general research consensus about sustainable agriculture (Finan, 2010; Peter et al., 2000; Trauger, 2004) and are useful to know considering that women farmers are more likely to operate in these spaces. I contribute evidence to understand the resilience processes that allow women to persist amidst the economic, environmental and prevailing gender adversities that a transition to sustainable farming models cannot fix. However, this still leaves significant gaps in understanding of the resilience processes that women farmers who remain on conventional farms enact. Organizations in states that operate mostly conventional farm models still need further research to understand how women farmers’ communication practices in these spaces contribute to their individual and business level resilience.

Chapter 4 of my thesis provides the most practical information for organizations that support women farmers in the United States. Recently, organizations have started offering training programs disseminated through social media, as well as suggesting social media as a tool to promote the resilience of farm business (Abrams & Sackman, 2014; Balkrishna & Deshmukh, 2017; Melendez et al., 2015). Social media, in particular, has proved to be an asset for farmers to better connect with customers, market their products, and exchange informational and emotional support with fellow farmers. However, the use of social media to build connections with other farms, male or female, was not a given. Many farmers did not feel they had the time to sift through the excessive content on social media to make it useful. This applied to all aspects of social media use except increasing sales. Even those who rejected the idea that social media contributed to their individual resilience accepted its necessary role in their farm businesses.
This is important for organizations to know, as they should be wary of promoting social media as a one size fits all tool. Continuing to create and promote informal network channels such as Facebook groups is important. However, these groups should be explicit about the type of conversation the group will provide to allow farmers to make more informed decisions about joining. Alternately, since farmers agreed upon social media as a necessary marketing tool, but it is decidedly not something that everyone is skilled at, organizations may have success providing trainings on how to improve social media for marketing skills. Organizations may also help farms create a “social media position” on their farms where they can hire others to handle their online marketing and sales channels.

5.2 Limitations and Additional Future Research

My research project had several methodological limitations related to timing, sampling and interview technique. Even with key informants in each state, identifying our targeted sample size of women farmers in the U.S. was challenging. Identifying them within the time constraints of the spring 2019 Qualitative Research Methods course was nearly impossible. In the end, the farmers we interviewed were those we could identify in the short time window between the start of the semester and the rapidly approaching start to the growing season. Beyond recruitment limitations, there were limitations due to data collection techniques. Having eleven different researchers meant variations in interview style and probing decisions. These variations would not have been present in the data had all interviews been conducted by one researcher. Despite valuable theoretical and practical contributions, this project would have benefitted from time to develop a more
informed and purposeful sampling strategy prior to recruitment data collection, as well as more time to standardize interview techniques.

Like any qualitative work, this study is limited in size and scope. As I hope this thesis adequately emphasized, my analysis and claims about women farmers are only able to represent the sample of 42 women farmers in my study. It is exceptionally critical not to generalize results to all US farmers considering the homogeneity of my research. All of our research participants, except for one who declined to report her race, were white, and many were able to survive financially making little income off their farm (45% made less than half of their income from their farm and almost a quarter made 10% or less). Therefore, there are cultural and socioeconomic factors that contribute to the resilience of our women farmers that others may not have. Organizations and policy makers should not take these findings to represent all women farmers. It is likely that women of color, queer women, and others who bring complex lived experiences to their farming practices enact alternative strategies to persist on their farms. This study is also not able to conceptualize those same farmers who may have chosen or been forced to leave the pursuit of their own farm operations due to sustainable agriculture’s limited opportunities for mobility.

Future research should address these limitations by more deeply acknowledging the complexity of women’s identities through more specific sampling of farmers. For example, women who are single, divorced or widowed experience unique challenges in farming that may differ from women who are either part of a farm couple or whose husbands have an off-farm job. This may also pertain to farmers who come from a multi-
generational farming family, compared to farmers who start off with no other farmers in their family.

In addition, future research may seek to study a more diverse racial and socioeconomic sample by studying women in farm laborer positions instead of farm operator. In particular, women in farm laborer positions are subject to further harassment, sexual assault and compromised work environments than elsewhere in the food chain (Allen & Sachs, 2011). The resilience strategies of this group, online or otherwise, are exceptionally important to understand in order to help farmers mitigate these inequitable conditions.

5.4 Conclusion

Farmers and small farm operations in the U.S. today face an uphill battle of enduring environmental and economic challenges; yet, women farmers have always shown persistence in face of enduring gender-related challenges. In addition to greater gender equality in agriculture, women’s increasing presence in agriculture offers vital contributions to social, cultural, economic and environmental preservation within increasingly vulnerable rural communities. This project, as well as future support for the resilience processes that have enabled women farmers to make such contributions, will allow organizations and online communities to better facilitate the continued success and resilience of women farmers.
Comprehensive Bibliography


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Appendices

Appendix A: Research Information Sheet

Title of Study: Supporting Agricultural Growth: Women Farmers’ Networking and Resilience

Principal Investigator (PI): Kerry Daigle

Faculty Sponsor: Sarah Heiss
Research Assistant: Kerry Daigle

Funder: UVM College of Agriculture and Life Sciences and VT-AES Hatch Fund

Introduction:
You are being invited to take part in this research study because you have been identified as a female who is either a principal farm operator or on a farm of fewer than four operators. This study is being conducted by Kerry Daigle at the University of Vermont for a graduate course in Food Systems called “Qualitative Research Methods”

Purpose
With more women entering into leadership roles within agriculture contexts and local food systems, it is important to understand communication factors that contribute to female farmer and ranchers’ success and resilience.

As a project for their research methods course, a group of graduate students in the University of Vermont’s College of Agriculture will conduct interviews to examine communication factors that contribute to the success of women farmers and ranchers. The students will conduct interviews with female farmers and ranchers to learn about the ways social media and other types of formal and informal communication networks within agricultural contexts may contribute to women’s sense of agency and ability to be persistent, resilient, and successful.
My name is Kerry Daigle I am a student in this Qualitative Research Methods course, and I have chosen to interview female farmers in [Insert state]

Study Procedures

If you take part in the study, you will be asked to complete a 30-45 minute telephone interview.

Questions in this interview will focus on who you regularly communicate with within food system and agricultural contexts, when, and where these communications take place. Additionally, we will ask questions regarding how these networks affect your daily life as it relates to your farm businesses and well being. There will be a specific emphasis on resilience.

Your response to these questions is completely voluntary, and you may decline to answer a question at any time without consequence.

Your participation in this study will consist of this one-time interview that is estimated to take 30-45 minutes.

Your responses will be analyzed along with other female farmers in your state, and I will then write a manuscript for class and present the findings. My supervisor, Sarah Heiss, and I, may also use the interviews when analyzing interviews with female farmers across the country. In all cases, your identity and responses will be confidential.

Benefits

As a participant in this research study, there may or may not be any direct benefit for you; however, information from this study may benefit other people now or in the future. The results of our study will be shared with relevant organizations in order to better support women farmers’ resilience amidst market changes and changing weather patterns.

Risks
We will do our best to protect the information we collect from you during this study. We will not collect any information that will identify you to further protect your confidentiality and avoid any potential risk for an accidental breach of confidentiality.

Costs
There will be no costs to you for participation in this research study.

Compensation

You will be reimbursed $50.00 for taking part in this research study.

After completing the interview, the researchers will mail or email (your preference) a Payment Acknowledgement Form, asking you to confirm your participation and provide your mailing address. After signing the form, you will email or mail it back to the research supervisor. You will receive a check in the mail for $50 within 3 weeks of our team receiving your signed form. Please let us know if for some reason you don’t want to be compensated for your participation.

Email the completed form to: Kerry.Daigle@uvm.edu (Subject Line: Female Farmer Study)

OR

Mail the completed to:
Kerry Daigle
c/o Tina Haskins
205 Morrill Hall
University of Vermont
Burlington, Vermont 05403

Confidentiality
All information collected about you during the course of this study will be stored without any identifiers (anonymous). No one will be able to match you to your answers.

Pre-research survey results, interview audio recordings, and transcripts of interviews will be kept on the password protected, secure UVM electronic network. Any audio-recording device will be stored in a locked drawer within a locked campus office on campus.

If you would like to be compensated for your time, the researcher will email you a “Payment Acknowledgement Form” form at the time of the interview. You will be asked to confirm your participation and to complete the form with your mailing address and signature. The form will indicate that you were a “Research Subject,” but it will not connect your participation to this data collection or to your unique interview responses. This form will be seen by the research supervisor and the UVM accounting office, both of which will maintain confidentiality and not disclose your participation to others.

This data will be maintained for 5 years.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study.

Questions

If you have any questions about this study now or in the future, you may contact me, Kerry Daigle. You may also contact my teacher, Sarah Heiss (sarah.heiss@ugm.edu/(802)-656-0036).

If you have questions or concerns about your rights as a research participant, then you may contact the Director of the Research Protections Office at (802) 656-5040.

Participation
Your participation is voluntary, and you may refuse to participate without penalty or discrimination at any time.

Appendix B: Demographic Survey

Please complete the following survey by typing into the blanks or highlighting the response that best reflects your and your farm/ranch. This information is confidential. We will not link your unique identity or business to your survey responses. If you’re uncomfortable responding, you can skip questions.

Please email it back to me before our interview. This will help me learn more about you and save us time during the interview.

Personal Demographics:

1. What year were you born?

2. Which of the following best represents your racial heritage? Choose all that apply.
   a) American Indian or Alaska Native
   b) Asian
   c) Black or African American
   d) Native Hawaiian or Other Pacific Islander
   e) White
   f) Other:

3. Which of the following best represents your ethnic heritage. Choose one.
   a) Hispanic or Latino
   b) Not Hispanic or Latino

4. How many children do you have under the age of 17 in your household?

Firmographics:

5. Please list the primary products you farm/ranch?

6. Please list the primary markets/sales channels for your products?
7. Are you a first generation farmer?
   a) Yes
   b) No

8. Overall, how many years have you been involved in farming or ranching?
   ___________

9. How many years have you been an operator on your current farm or ranch?
   ___________

10. Are you the sole farm/ranch operator or do you have operating partners?
    a) I am the sole farm/ranch operator
    b) I have 1 other operating partner.
    c) I have 2 other operating partners.
    d) I have 3 other operating partners.
    e) I have 4+ other operating partners.

11. What percentage of your household income would you estimate comes from your farm or ranch?
    a) <10%
    b) 10%
    c) 20%
    d) 30%
    e) 40%
    f) 50%
    g) 60%
    h) 70%
    i) 90%
    j) 100%

12. Do you have an off farm job?
    a) Yes
    b) No

13. What is your relational status?
    a) Married
    b) Domestic Partner
    c) Single
    d) Divorced
    e) Widowed

14. If you are married or in a domestic partnership, does your relational partner, serve as an operating partner with you on your farm or ranch?
    a) Yes
Appendix C: Interview Protocol

OPENING

Hi _________. Thank you for taking the time to participate in this interview. We will be talking to you about networks you participate in that relate to agriculture. I’d like to hear about the things that people say or do in those networks help you or each other persevere during challenges related to owning farm or ranch, owning a business, and personal or professional life.

It is important for you to know that your participation is voluntary. We can skip any question you don’t feel comfortable answering—just let me know.

Also, I just want to remind you that your identity and your business’s identify is confidential. No one will know that you participated in this study. If you mention any person’s or organization, specifically it will also be confidential.

I would like to audio-record our conversation, so I can be sure I correctly represent your comments in the future. Is that okay? [start recording]
NETWORKS

TRANSITION: Let’s start by talking about your formal and informal networks in agriculture.

1. I’d like to talk about the people or groups you connect with, follow, or talk to about issues related to your farm or ranch, your business, or your role as a farmer and rancher.

Let’s define formal as groups or persons that use “top-down” conventional workshops or conferences to discuss ag topics or collaborative research projects, etc. On the other hand, informal networks refer to relationships that you have with people or groups that are self-organized by the members.

a) Which formal groups or relationships in ag that you participate in?
   - Examples: Formal groups or persons are typically organized by a nonprofit, for-profit, or industry group. Could be face to face or mediated. Collaborative research or organized learning events, such as conventions, workshops, or webinars. Groups might include Extension, USDA, USDA hubs, food hubs, City/State Agriculture Groups, Women Farmer organizations, Industry Groups

b) Which informal groups or relationships in ag that you participate in?
   - Examples: Informal groups or persons are self-organized and maintained by the members (who are people and or people representing the business they own). Could be face to face or mediated. Examples: in person meetings or telephone calls, participating in an online group or forum that is it organized and maintained by the followers (rather than a central organization), following social media feed (Facebook, Instagram, Twitter, Blogs) created by farmers or ranchers. Family, relationships, and friendships with other farmers or groups of farmers,

2. How do these networks use mediated communication, such as cell phones, texting, websites, podcasts, email listservs, or social media, to stay connected or talk to one another? Which?

COLLECTIVE RESILIENCE
TRANSITION: Now let’s focus on one of the groups that use media to stay connected. If you have more than one, let’s talk about the one you feel most connected to.…

[If they don’t have group connected by media, go to page 7].

1. Tell me about this network.
   a) Who are they? (women?)
   b) In general, what does this group talk about?
   c) How did you find it?
   d) Is this a public group or a private group?
   e) What communication technology/media are they using to stay connected?***

2. What about this network or your participation with this network makes you feel connected?
   a. How frequently do you communicate with or “check-in” on this group?
   b. What communication technology/media are they using to stay connected?

3. What do people in this ag group say or do when talking about challenges?
   a) Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)
   b) Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

4. You just mentioned a _ (Pick one. Be specific: extreme weather events, agricultural needs, market fluctuations, farming businesses, or farmer identity challenge). Tell me a story about a specific time the group had to respond to that challenge.
   a) What happened? What did people say or do? What was the outcome?
   b) To what degree do you think the things that people say or do contribute or hinder the group’s overall resilience to these challenges? How do you know?
Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

**INDIVIDUAL RESILIENCE**

Thank you for telling me about __________ and the things they say or do to support one another through challenges. Now I’d love to talk about your personal experiences in this group.

5. To what degree, do the topics discussed by the network reflect the challenges you face as a female farmer?

6. In general, how has this group helped or hindered you as a female farmer?
   a) Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)
   b) Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

7. Tell me a story about a time you reached out for support on a specific challenge from this group or an individual member of this group?
   a) What happened? What did people say or do? What was the outcome?
   b) How did this response help or hinder you and your ability to respond to the challenge?
   c) What did the help or conversation look like - For example, did you talk one-one one or publically in the group, in person or using communication technology, social media – why?
d) Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

e) Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

8. Tell me a story about a time you supported someone else in this group or the group overall through a specific challenge?

○ How did you know what to say or do to be helpful?*
○ How did your response help or hinder the other farmer(s) through that difficult time? How do you know?
○ Did helping that person through that interaction help you? How so?

○ Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

○ Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

CLOSING

Thank you so much for your time today.

Clearing house: Is there anything else you would like to tell me about how your communication with others in this network or a different one has contributed to your ability to be resilient?

I’m going to use this interviews and several others to write a paper about female farmers and ranchers. I will present my findings in a webinar in May. My teacher is also going to
share resources and materials stemming from this class project with Extension. Would you like to be invited to that webinar?

**Compensation**

You will be compensated $50 for completing the interview. To do that, I need you to sign and return a form acknowledging that you participated in this interview.

I just need some information from you today to get that going…. [fill in the Payment Acknowledgement Form): Could you tell me your name and mailing address?

Would you like me to mail you the form with a pre-addressed return envelope or email you the form for you to print, sign and return (as a photograph on your phone or a scanned document)?

I’m going to (email or mail) this form within the next 48-hours. Once you get it fill in any information needed and sign it.

Email the completed form to: Kerry.Daigle@uvm.edu (Subject Line: Female Farmer Study)

OR

Mail the completed to:

Kerry Daigle

c/o Tina Haskins

205 Morrill Hall

University of Vermont

Burlington, Vermont 05403

Once your signed form is returned, UVM will mail you a check within 3 weeks. Please let me know if for any reason you don’t get the form or a check after returning a signed form.

Immediately after the interview email or send the Payment Acknowledgement Form to the interviewee.
THANK YOU.

REPORTS NO MEDIATED NETWORK

Let’s talk about the network you feel most connected to then….

3. Tell me about this network.
   f) Who are they? (women?)
   g) In general, what does this group talk about?
   h) How did you find it?
   i) Is this a public group or a private group?

4. How does this network stay connected to one another?
   a. Phone calls, news letters, fliers, town meetings, extension or conference meetings, farms market conversation etc

5. What about this network or your participation with this network makes you feel connected?
   a. How frequently do you communicate with or “check-in” on this group?
   b. What communication technology/media are they using to stay connected?

9. What do people in this ag group say or do when talking about challenges?
   a) Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)
   b) Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

10. You just mentioned a _ (Pick one. Be specific: extreme weather events, agricultural needs, market fluctuations, farming businesses, or farmer identity challenge). Tell me a story about a specific time the group had to respond to that challenge.
a) What happened? What did people say or do? What was the outcome?

b) To what degree do you think the things that people say or do contribute or hinder the group’s overall resilience to these challenges? How do you know?

Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

INDIVIDUAL RESILIENCE

Thank you for telling me about __________ and the things they say or do to support one another through challenges. Now I’d love to talk about your personal experiences in this group.

11. To what degree, do the topics discussed by the network reflect the challenges you face as a female farmer?

12. In general, how has this group helped or hindered you as a female farmer?

   a) Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

   b) Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

13. Tell me a story about a time you reached out for support on a specific challenge from this group or an individual member of this group?

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c) What did the help or conversation look like - For example, did you talk one-one one or publically in the group, in person or using communication technology, social media – why?

d) Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

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14. Tell me a story about a time you supported someone else in this group or the group overall through a specific challenge?

○ How did you know what to say or do to be helpful?*

○ How did your response help or hinder the other farmer(s) through that difficult time? How do you know?

○ Did helping that person through that interaction help you? How so?

○ Probe areas of social supportive communication if they come up. (a) material, (b) informational, (c) esteem support (self-worth and self-efficacy), or (d) emotional support (listening and empathizing)

○ Probe areas of Buzzanell’s communication if they come up (a) crafting normalcy, (b) affirming identity anchors, (c) maintaining and using communication networks, (d) putting alternative logics to work and (e) downplaying negative feelings while foregrounding positive emotions, such as hopefulness and self-efficacy.

**REFLECTION ON MEDIA**

You said earlier that you are not using media (social media, texting, to connect with ag groups. Can you tell me why?

Probes: Personal choice, Personal skills, Geographic, Lack of Ag Groups
How do you think not using media to stay connected with ag groups has helped or hindered your farm or you as a farmer?

**CLOSING**

Thank you so much for your time today.

**Clearing house:** Is there anything else you would like to tell me about how your communication with others in this network or a different one has contributed to your ability to be resilient?

I’m going to use this interviews and several others to write a paper about female farmers and ranchers. I will present my findings in a webinar in May. My teacher is also going to share resources and materials stemming from this class project with Extension. Would you like to be invited to that webinar?

**Compensation**

You will be compensated $50 for completing the interview. To do that, I need you to sign and return a form acknowledging that you participated in this interview.

I just need some information from you today to get that going…. [fill in the Payment Acknowledgement Form]: Could you tell me your name and mailing address?

Would you like me to mail you the form with a pre-addressed return envelope or email you the form for you to print, sign and return (as a photograph on your phone or a scanned document)?

I’m going to (email or mail) this form within the next 48-hours. Once you get it fill in any information needed and sign it.

Email the completed form to: [Kerry.Daigle@uvm.edu](mailto:Kerry.Daigle@uvm.edu) (Subject Line: Female Farmer Study)

OR

Mail the completed to:
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c/o Tina Haskins
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