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“Death by a Thousand Cuts”: Agriculture Producer Resiliency in the Western United States

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ABSTRACT

Objective: Agricultural producers face a wide array of stress triggers, shocks, and long-term pressures such as drought, flooding, fire, government policies, financial insecurity, and physical injuries. Extant research has revealed that mental health stigma, lack of access to care in rural areas, and negative coping responses (alcohol abuse, suicide, prescription drugs use) exacerbate the challenge of producer responses to short and long-term adversity. Resilience, the traits, processes, and capacities of producers to adapt and transform their approach to farming or ranching, when necessary, in response to stress triggers or long-term pressures, has received less research attention, particularly in the Western United States. The purpose of the study was to apply an interactionist occupational resilience theoretical perspective to the investigation of contextual factors contributing to resilience in Western United States agricultural producers.

Methods: Qualitative interviews (45 to 90 minutes) were conducted with agricultural producers (n=51) from Western states and territories. Applied thematic analysis with a phenomenological lens was utilized to analyze interview transcriptions. First and second level coding were conducted to derive themes.

Results: The analysis revealed that resilience is based upon the interactions between traits of producers and the context of agriculture. Four themes were generated (Agricultural Life, External Stressors, Traits and Adaptations, and Supports and Resources), supported by subthemes. The themes and subthemes are depicted in an agricultural producer resiliency model. The findings shed light on the equivocal role of neighbors in providing support for each other and the double-edged sword of co-working with family.

Conclusions: The findings underscore that social capital is an important mechanism for supporting farmers and ranchers, as those with stronger social resources are more resilient. We recommend more funding to tailor stress and mental health programming to the specifics of agriculture, integration of behavioral health in primary care as a mechanism to increase access to care, and more intentional technical assistance for farmers and ranchers on strategic planning and problem solving.

KEYWORDS

Agricultural resilience; farmer and rancher resiliency; agricultural stress;; qualitative thematic analysis



1. Introduction

Ranches, cattle drives and brandings are the language of agriculture in the United States Old West, where cattle are turned out to wide open spaces and predators abound. Over the past 30 years wildfire and megadrought have joined the vernacular of Western agriculture. The increase in wildfires in the West threatens forests and rangelands.¹ Thirty percent of Western farmlands are irrigated, and four of the five U.S. states most impacted by drought are located in the West.²

Drought and wildfire are only two of the stress triggers facing Western agricultural producers.

Water rights, irrigation technology, financial strain, policy issues,³ work weeks of 58 to 66 hours.^{4,5} physical injuries,^{6,7} respiratory conditions,^{8,9} low operating profit margins,¹⁰ high credit interest expenses,¹¹ and the strain of government policies^{3,12} contribute to stress and adverse mental health outcomes.^{13–18} Socially disadvantaged farmers and ranchers face additional barriers including reduced capacity to acquire credit¹⁹ and to purchase land.²⁰

Despite the challenges, evidence suggests that agricultural producers are resilient. A study on occupational satisfaction reported that 78% of farmers were highly satisfied with their occupation, with

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respondents indicating that the work was interesting, provided opportunities for independent decision making, and occurred in the pleasant surroundings of an outdoor workplace.²¹ The physical fitness of farmers and ranchers was found to be higher than the general U.S. population and older farmers had better general health and vitality than non-farmers of the same age.³ In addition, researchers reported that family relationships were enhanced by the farming and ranching lifestyle.^{22,23}

Occupational resilience, the theoretical foundation for this study, is defined as the ability to acclimate to job demands and adjust to job-related adversity nested within the unique context of the occupation.²⁴ Occupational resilience is a dynamic process of interaction between the capacity to access resources, occupationally defined negative and positive triggers, career stage, general and job-specific occupational strain, and work/non-work spheres. The context of the occupation promotes or confines resilience, interacting with the traits of individuals and negative and positive stress triggers associated with the occupation.²⁴

Research on the occupational resiliency of agriculturists has been somewhat neglected in the United States, apart from a few studies that identified farm financial stability,^{12,25,26} social connectedness,^{27–30} and coping strategies^{3,27,28} as factors associated with agricultural resilience. Most research on farming has focused not on occupational resiliency but on negative occupational attributes.³¹ The extant research on agricultural resiliency has predominantly been conducted in Australia,^{25,27–30,32,33,34} Canada,^{35,36} and with smallholders in the global south^{37,38}. Le Goff et al²⁶ surmised that farm resilience varies in different contexts, so the agriculture resilience findings from Australia may be inapplicable to the Western United States. The exclusion of resiliency from the research limits our understanding of how Western agriculture producers, particularly small farmers, thrive in the face of adversity such as drought and wildfire, and constrains our capacity to design programs to bolster occupational resiliency for agriculture.³¹

To speak to this knowledge gap, we posited the following research question: How are Western agricultural producers navigating through stress triggers such as drought, wildfire, and financial strain? To address the question we conducted 51 qualitative interviews of producers in the Western United

States, with the intent of understanding the stress triggers and the adaptive processes that bolster or diminish occupational resilience. The overarching goal was to extract from the data knowledge that would inform programs and policies to support resiliency of Western agriculturalists.

Table 1. Participant pseudonyms and geographic location.

Participant Pseudonym	Participant Geographic Location
Asher	Alaska
Rory	California
Sammie	California
Shae	California
Eli	California
Jessie	California
Kit	California
Francis	Colorado
Guinn	Colorado
Ashton	Federated States of Micronesia
Cameron	Federated States of Micronesia
Zachary	Federated States of Micronesia
Georgina	Federated States of Micronesia
Beverly	Guam
Casey	Guam
Dean	Guam
Andi	Guam
Ellie	Guam
Lester	Guam
Bailey	Idaho
Blake	Idaho
Blair	Idaho
Devon	Idaho
Ellis	Montana
Betty	Montana
Charley	Montana
Dakota	Montana
Emerson	Montana
Frankie	Montana
Oakley	Nevada
Ollie	Nevada
Presley	Nevada
Quinn	Nevada
Riley	Nevada
Alex	New Mexico
Avery	Northern Mariana Islands
Charlie	Northern Mariana Islands
Jesse	Northern Mariana Islands
Jordan	Northern Mariana Islands
Skylar	Northern Mariana Islands
Ryan	Northern Mariana Islands
Reese	Oregon
Sawyer	Oregon
Scout	Oregon
Shilon	Oregon
Taylor	Oregon
Cassie	Utah
Addison	Washington
Braden	Washington
Callan	Washington
Chris	Wyoming

Gender, ethnicity, and other demographic factors are not included in Table 1 to protect the identities of participants.

2. Method

The qualitative approach was selected for this study because there is limited research on this topic, lending quantitative approaches less viable. Qualitative research, though not generalizable, allows for a deeper exploration of experiences and provides the opportunity for producers to tell their story, goals not easily accomplished through quantitative approaches.³⁹

2.1. Participants

The participants were self-identified agricultural producers, defined as those who grow or raise food for consumption, from the Western United States. The Western region which constituted the sampling frame for an online survey used to recruit study participants included the states and territories delineated by the USDA as Western Region: Washington, Oregon, California, Nevada, Montana, Idaho, Utah, Colorado, Wyoming, Arizona, New Mexico, Alaska, Hawaii, Guam, Northern Mariana Islands, and Federated States of Micronesia. Our qualitative study was comprised of 51 total survey respondents who volunteered to be interviewed, representing 14 of the 16 Western region states and territories (see [Table 1](#)).

2.2. Procedures

Following approval by the Human Subjects Review Board (University of Nevada, Reno 1,727,734–2) participants were recruited through a larger research project involving an anonymous online survey completed between February and July 2021 by 796 producers in the Western United States and territories. At the end of the online survey respondents a statement appeared that invited participants to complete a form if they were interested in participating in an interview for which they would be given an online VISA gift card in the amount of \$75 U.S. dollars. Of the 71 volunteers, 20 did not respond leaving 51 participants. Three research assistants contacted the 51 volunteers and scheduled 45-to-60-minute semi-structured telephone interviews conducted between July and September 2021 (see protocol in Appendix). The interviews were conducted in English, Spanish,

and Chamorro. All interviews were then translated into English transcripts, with the English language recordings transcribed by a secure transcription service.

2.3. Data analysis

Applied thematic analysis³⁹ was conducted with a phenomenological lens.⁴⁰ First, the transcripts were uploaded to NVivo⁴¹ for initial, broad coding by three research team members. Following the initial coding, cross-coding iterative applied thematic analysis was conducted by coding the significant segments to identify emergent themes. The establishment of the codebook included collapsing some coding categories and attaching theme and sub-theme tags. Following data coding, three researchers reviewed the coding, examined commonalities and differences across themes, and adjusted the themes tags. This process was repeated with a second team.

3. Findings

The mean average age of participants was 51 with a range of 26 to 75. The participants were 45.8% female, 52.1% male, 1 non-binary, and 3 non-responses. The ethnic composition of the participants was White (29), Indigenous (9), Filipino (2), Black (1), Hispanic (1), other (3), and non-responses (6). Thirty participants were married. The mean average years working in agriculture was 27.9. Most participants (64.7%) had attended some college or earned college degrees.

The majority of the farms operated by participants were identified as small (84.3%), with no corporate farms. Most of the farms (74.2%) had at least one adult working off farm, employed in a wide range of industries such as extension, construction, medical, education, and engineering. The majority of participants (61.3%) reported gross annual sales of \$99,000 or less. Perception of financial wellbeing measured on a scale where 1 represented “dismal” and 10 represented “secure” yielded a mean of 5.6 (sd = 2.2). Participants grew a wide range of crops including 46.9% livestock (beef cattle, hogs and pigs, sheep and goats, general livestock), 21.9% field crops (alfalfa, Irish potatoes, yams, taro, corn, sorghum, hay, and

Table 2. Agricultural life theme: participant quotations.

Subtheme: Co-Working with Family	
	<p><i>"We are a family business, so we lean on each other. It's myself, my wife and our four adult children. And so we're used to the challenges. We have lived in the Alaska bush for 27 years, so we're used to the difficulty of living remote and the challenges that are presented. We have endured earthquake, volcanoes, 46 dense snowstorms... So we see the ups and downs daily, and we tend to lean on each other pretty heavily, and that is always served us well."</i> [Asher]</p> <p><i>"Well, I grew up here, and I turned 18, I continued to work here on the ranch for another four years after I graduated high school, because I don't know, I felt like I wasn't smart enough to do anything else. I mean this was all I knew. And my dad needed help, my grandparents were getting quite elderly, and they couldn't do much, and so I stayed here until I got married. But when I got married, I couldn't see myself staying here. My dad and I, even though I loved him and cared about him and stuff, we didn't see eye to eye on most things."</i> [Quinn]</p> <p><i>"We bought out an uncle and since buying him out, he's kind of become hostile ... and so that is leading to the most change and how my husband and I are now dealing with the farm and ranch, because we don't want our children to hate each other ... we want to still be a family."</i> [Taylor]</p>
Subtheme: Multigenerational	
	<p><i>"... the family business has been around since my dad bought it, over 40 plus years ago. So there's a sense of, I guess, responsibility that you have to carry on that name, you have to carry on the tradition."</i> [Riley]</p> <p><i>"Ever since I was a little boy, I looked up to my dad. He just gave you a peaceful comfortable feeling. We were flood irrigating at the time to put the cans in the ditch, and see the water go out onto the pasture grass or down the potato rows, filling every other row with dirt when I was three, four years old with a little shovel and boots. I think that I wouldn't have wanted to do anything different. I loved every bit of it."</i> [Blake]</p> <p><i>"I've got two sons that are farming with us ... unfortunately one of my sons is just not stepping up to the plate and my wife and I have pretty much come to the conclusion that we're probably going to not turn things over to him ... It would be so disruptive for the farm and his brother who? (our other son) is involved in this as well ... his brother has been so patient ... We are going to wait until after the harvest is over to tell my other son that he is not going to be part of the farm and that's going to be very difficult."</i> [Francis]</p> <p><i>"So my dad was kind of old school and I was kind of trying to do new things and the farm was in a lot of debt, so that was stressful too. And I mean, I can remember thinking and having horrible thoughts about, and I mean, I hate to even say it out loud, but just about where I just didn't even want to live anymore. And I wanted to blame my dad for it."</i> [Dakota]</p>
Subtheme: Work Schedule Control and Work/Home Separation	
	<p><i>"I get jealous of a lot of people that have really stable jobs where they know when they get stops and they know that they get holidays... I guess that work is easier for them [and they can] leave their problems behind and not take it personally."</i> [Ollie]</p> <p><i>"I'm going to be 50 this year and I've never had a vacation in the summer. And so I start looking at that and I wouldn't mind having a week off in the summer. Or not having to work seven days a week."</i> [Callan]</p> <p><i>"I'm checking the cows every two hours, 24 hours a day, six to eight weeks. And then I got to go to work in town again."</i> [Betty]</p> <p><i>"I think it's been a struggle and it's been hard balancing everything at times, as far as the animals and life goes. And it's hard when you're trying to get stuff done, like we ripped out our fireplace and couldn't finish it because something happened with the animals. And you're dropping everything to go fix something or, it's 9:30 at night and your daughter comes in because an animal is bleeding. That part has been probably the biggest stress of everything is like, 'Oh crap.' Just when you think that you relax, you can do something, something happens with the animals. We never really fully get a break."</i> [Riley]</p>
Food Systems	
	<p><i>... but the dirty little secret that the public is unaware of is that despite the prices we charge for the products that we raise, it's an unsustainable model because the truth is, in America we don't charge what it costs to raise the food that we consume. It came because of the obvious breakdown of the supply chain when COVID hit. But it was coming anyway. The slaughterhouse we have been using, which was two hours away by the way, shut down to private customers. They went corporate, they're doing their thing and they shut us all out. And that's a lot of us. I mean, that's not just the two of us. There's some big cattle people and pig people and sheep and all the rest of it. So what happened was it forced us to talk together and go cooperative, which is a wonderful thing. That's the way life should be not the other. So, yeah, it was partly COVID but it happened prior to that.</i></p> <p>[Palmer]</p> <p>And in our county here in Mendocino specifically, the Farm Bureau, like the entire county, they're all owned by the wine industry. And this is an interesting battle that's going on right now. Because pot has been legalized here, cannabis has been legalized here in California. So all of the little off the grid growers are now getting screwed. Because, it's not considered an agricultural endeavor. It's a product. So they are defining cannabis differently from growing lettuce. And they're coming down on the growers hugely. Meanwhile, the wineries are still sucking water out of the streams, although right now they're probably sucking sand. But it's about money again. And supposedly, the wine industry is all over the place and pays for everything.</p> <p>[Palmer]</p> <p>with I would say just production and just the general stress of having a depressed commodity market as a wage, things along those lines where it seems like no matter what you do, no matter how hard you can work you never quite seem to get ahead. There's always a curve ball that's thrown at you that seems to keep you at that same level. So I would say it's kind of a toss-up between those two, and a lot of that of course on the family end of things, is not directly related but indirectly related just to the general farm and agricultural stability in there. [Scout]</p> <p>Mainly with the feed cost. We've been watching where other people are getting their hay and everything like that, because it's going to be a very real thing come this winter. So we went from keeping 10 bales of hay on hand to now we have 30 on hand at all times. I imagine as it gets into the winter, we'll probably have 60 on hand, just from that already. [Riley]</p> <p>I think labor shortages are really stressful. It can be hard, people often romanticize farming, and then they commit to doing it for a season and then they realize it's really hard work. [Addison]</p>

(Continued)

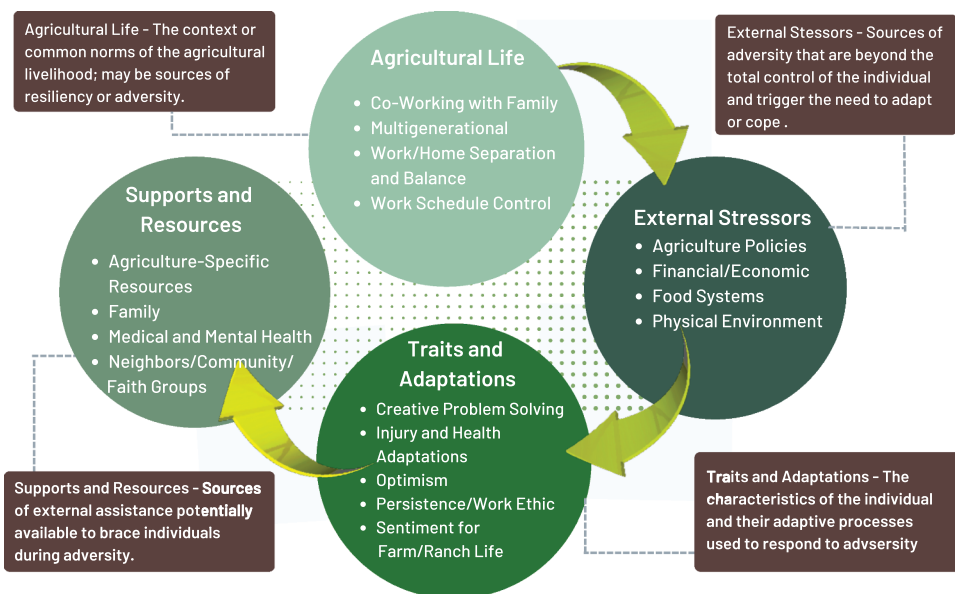
Table 2. (Continued).

My merino sheep is a project that I worked many years to get to where I am. And I have imported semen out of Australia to have certain bloodlines to improve the wool. I have the only set of bloodlines in the United States of this particular merino stud out of Australia. Before COVID, I was [inaudible 00:05:06] into a very select group of commercial breeders in Utah and California that were willing to pay a little more to get the bloodlines, to get the wool production. Because the wool market is worldwide really good [Oakley]

You always had your struggles because prices fluctuated, but that's just part of it and you just get used to it and you're okay. I've struggled with my personal, with being disabled and having surgeries and having to hire more help and stuff but you have to find different ways. I have an electric scooter. [Quinn]

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AGRICULTURAL PRODUCER RESILIENCY MODEL

**Figure 1.** Agriculture resiliency themes.

cotton), and 18.8% poultry, eggs, and cash grain (barley, sunflower seeds). Other crops included forest products, floriculture, fruits and tree nuts, horticulture, animal specialty, and vegetables or melons.

The results yielded four major themes: *Agricultural Life*, *External Stressors*, *Traits and Adaptations*, and *Supports and Resources*. Each theme encompassed one or more subtopics which are discussed in this section. Supporting quotes for the sub-themes are found in Tables 2–5. Figure 1 offers a visual representation of the themes and sub-themes.

3.1. Theme 1: agricultural life

The theme, *Agriculture Life* reflected the contextual issues that influence occupational resilience. The producers emphasized the unique lifestyle that is integral to the farming experience. Three aspects of the agricultural context that were accentuated in the interviews were co-working with family, the multigenerational nature of farming, and lack of control over work schedules and separation between work and home. Sample quotes supporting these three sub-themes are found in Table 2.

The subtheme, *Co-working with Family*, highlighted that for many producers the agricultural lifestyle involves co-working with immediate or extended family members. In some cases co-working arose from a sense of obligation or a desire to help the family. In other instances there were few alternatives to co-working with family because the skill sets developed in childhood were agriculture related and the family farm was the only viable means of employment. Still others co-worked with family to enjoy being “all in it together” as a family.

While some participants spoke of co-working with family members as a source of pride, others did not find co-working to be a panacea. Sources of strain included family conflicts over operational decisions (such as succession), intermingled finances, and the lack of time for family activities. As stated by Blair: “I would have to say that the biggest problems we really had with the farm were more family related because you can get over things like getting thrown from a horse ... but the hurt feelings you get from family problems ... It’s really hard when you have family issues in addition to be tied together financially, you know?”

The *Multigenerational* subtheme describes the passing of land, skills, and agricultural norms from one generation to the next. Though some participants were not involved in multigenerational agriculture, or their family members had moved or passed away most participants had multigenerational family connections. Passing on a healthy operation to the next generation, transferring unique knowledge and skills necessary to thrive in the livelihood, and upholding shared family history were predominant concepts in the *Multigenerational* sub-theme, as is evident in Table 2. Chris reflected: “We’re on a multi-generational ranch. It’s my husband’s family, but he’s a fourth generation. My son’s a fifth and we’ve got grandchildren, they’ll be a sixth generation. So we are trying to keep it in the family.” Beyond land succession, powerful emotions such as loyalty, responsibility to family lineage, the power of promises made to parents and grandparents, and pride in descendants were reflected by participants. Charlie reported that he was motivated to keep the family farm because of a promise he made to his dying father: “When

my dad passed away ... I have four brothers. My dad didn’t say ‘don’t fight’ or ‘help each other.’ He said, ‘protect the pasture.’ So that’s why it’s hard for me to let it go.”

As exemplified by the quotes in Table 2, co-working with family and multigenerational farming can have a positive or negative impact on resilience, driving some to grow more deeply connected to the occupation and others to push away. Akin to the co-working subtheme, some found multigenerational agriculture a source of stress or depression rather than a source of resilience. Different styles of farming or the modernizing of the farm can incite multigenerational conflict, as might passing the land to children who are not adept in farming.

In the subtheme, *Work Schedule Control and Work/Home Separation* there was consensus that an invariable condition in the agricultural lifestyle was the inability to take vacations and to control work schedules, as unexpected needs of the animals, changing weather conditions, and seasonal demands overshadowed other plans. Participants shared that unexpected farm crisis situations and heavy workloads in some seasons led to difficulty maintaining work/life balance. Work/home balance problems were exacerbated by participants living and working on the same property. Work Schedule Control and Work/Home Separation appear to be conditions of the agricultural lifestyle. Resiliency in some cases was fostered not by changing the work schedule, but by improving coping skills.

3.2. Theme 2: external stressors

The *External Stressors* theme described the factors that triggered stress and adversity. Drought, wild-fire, weather, and other physical environment issues were frequently cited as triggering stress, but also financial strain and policies. The subthemes illuminated by quotes found in Table 3 included: *Agricultural Policies*, *Financial/Economic*, and *Physical Environment*.

The sub-theme, *Agricultural Policies* reflected the stress producers experienced with new policies or changes in existing agricultural policies. Policy changes or the imposition of new policy controls

Table 3. External stressors theme: participant quotations.

Subtheme: Agricultural Policies
<p><i>"Everything was going fine for a very long time until the local farming movement began to catch the attention of regulatory authorities... Then somebody got the bright idea along with the advent of the Food Safety Modernization Act ... 'We've got to get in here and we've got to regulate before the government steps in ... ' This was a terrible idea to just allow this sweeping movement of regulatory control to come over all of the smaller farms ... made up by pencil-pushers who have never even stuck a shovel into soil."</i> [Eli]</p> <p><i>"Because when they changed H-2A wages... so the current policy is that they can't be a salaried position, which is nonsense. So now you have to pay sheep H-2A herders ... 24 hours a day, seven days a week. Anything after 40 hours in a week is overtime. You're going to see Western sheep herders sell en masse."</i> [Oakley]</p> <p><i>"That was when all of a sudden what I call death by a thousand cuts began. Suddenly we were supposed to register ourselves as this and sign up for that and fill out this form and pay this particular fee and get this handler's license and then that handler's license."</i> [Skye]</p>
Subtheme: Financial/Economic
<p><i>"We're coming into another drought cycle... The economy of scale is starting to hinder an operation our size because we're not big enough to swallow up our neighbors. We're probably much closer to being swallowed up by a neighbor."</i> [Francis]</p> <p><i>"I think that the biggest impact and stress is typically financial. We put so much in financially in the hope that we will be able to draw that back out ... then things like flooding or a hail storm, or a sudden frost ... Every day there is always the issue 'am I going to be able to pay the bills?' And probably mentally the biggest toll for us is that constant of being able to keep the operation viable financially."</i> [Asher]</p> <p><i>"I didn't inherit a ranch. I actually bought one. I financed 80% of my ranch. So the finances have been really nip and tuck ... It's just, like I said earlier, there's so much uncertainty and uncontrollable things in the business. I mean, I know that's the number one contributor of stress, is things you can't control. That's about all we have."</i> [Charley]</p>
Subtheme: Physical Environment
<p><i>"So I get up here and the hay is burned up. We are experiencing the worst drought in like 140 years or something like that."</i> [Blair]</p> <p><i>"I think the biggest stressor was definitely living in a wild land urban interface. I had an attack from a mountain lion. I think it was traumatic because it was not a successful predatory kill, and I did have to euthanize the animal, which was pregnant at the time."</i> [Alex]</p> <p><i>"We had a situation called peach skin discoloration ... we have absolutely no clue about what causes it. We know ions are catalytic and they cause... reds go to black, yellows go to brown. And so, you have peaches that look like you rolled them across the floor. And if you pull the skin off, they're beautiful underneath. There's nothing wrong with the peach, except it just lost the fashion show. And you can't sell ugly fruit. Fruit that looks like it has been rolled in the dirt is not... it's a hard sell."</i> [Guinn]</p>

often led to operational changes and increased workloads, ultimately influencing financial well-being.

The *Financial* subtheme included stress associated with agricultural policies that impact profit, debt, challenges in securing loans, the breakdown of the supply chain, saving for retirement, financial markets, employee wages and insurance, and operational decisions. Almost all participants voiced financial concerns and indicated that generally it is difficult to make a reasonable living in farming and ranching. Callan expressed it this way: "I'm working more hours for less money every day..." *Financial/Economic* stressors were also sometimes depicted as an interaction between market conditions and operational decisions. As disclosed by Guinn, "... apples were financially very devastating. I mean, the apple market shifted, and we figured we'd wait it out. But what we didn't realize is the fundamentals had changed."

A buffering effect on financial stress was having one or more family members working off the farm. While off-farm work helped mitigate the financial stress, it came with its own stressors such as increased strain on work/life balance.

The subtheme *Physical Environment* included pests, wildfire, hailstorms, wild land interface, plant diseases and other environmental factors that were identified as adverse events that trigger stress. Not unexpected for Western producers, drought was the primary environmental stress trigger. As described by Reese,

Well, I'm going to be out of the cow business pretty quick here if we don't get some water. It's pretty traumatic ... It's ending a 40-year experience because of climate and lack of water.

In External Stressor financial stress is the link between the theme and resilience. Essentially the resilience of the producers was challenged when external stressors had a negative financial impact.

3.3. Theme 3: traits and adaptations

Traits and Adaptations depicted occupational resiliency traits of agriculturalists such as optimism, hard work, capacity to plan and solve problems, and persistence. Persistence and work ethic were assumed by participants to be an ordinary

Table 4. Traits and adaptations theme: participant quotations.

Subtheme: <i>Planning and Problem Solving</i>
<i>"I've had to tear out an acre and a half of lavender and I have to remediate for 18 months to try to bring the count of this fungus down. You know, we'll never get rid of it, but we need to reduce the fungus. And then when we replant, we need to find varieties that can take the heat a little better. And then we're going to be using biologics to give them some strength so that they might be able to fight the fungus. All of that's a three year process for me."</i> [Sam]
<i>"So it's a lot of planning ahead. Normally in my life I'm a procrastinator. Not on purpose, it just happens. You're busy, life happens. And I think the farm has forced me to plan ahead and look ahead..."</i> [Riley]
<i>"I'm an over planner. I plan then I check all the facts and then I consult with others. I don't actually ride the tractor, I have operators. So we get together annually to decide what crops, and all that, when to sell, and that kind of thing. So we plan, we have a plan, we roll the numbers around and try to be prepared for any contingencies."</i> [Devon]
Subtheme: <i>Optimism</i>
<i>"I generally have a smile on my face. Even when the going's tough, I am generally smiling. I might be grinding my teeth, but I'm still smiling, and trying to find the humor in things."</i> [Taylor]
<i>"Okay, I've taken this emotional toll and now I need to cope in the best way possible, and that's to make the most of what the situation currently is, not what it was or what it will be, but what it actually is. I think being able to just... The situation is done, this is now the opportunity I have."</i> [Alex]
<i>"I've been doing this. I send out an email to people and keep them up to date on the farm and stuff, but I sign off oftentimes 'I remain optimistic.' And I talk it. You know, I'm going out and when I talk to people and when we do farm tours and they just go, 'How do you do this?' I go, 'It's my nature to be optimistic.' I remind myself to stay optimistic. I journal most Friday nights about the week, and that's great because I can dump any negative thoughts into the journal and not keep them."</i> [Sammie]
Subtheme: <i>Persistence/Work Ethic</i>
<i>"You have to keep going, otherwise you're gonna sit there and wait for handouts that are just not going to happen or it doesn't last forever."</i> [Andi]
<i>"Yeah, so I would say things that got us through there were a combination of just I guess unable to accept defeat. You're like no, we had a rough go but we are going to make this right, we're going to make everything work. So there was a lot of perseverance and determination that assisted us in getting through."</i> [Scout]
<i>"Obstinance. In this case, it was strictly survival. And I think just being strong-willed and not giving up, not quitting, and wading our way through it as best we could."</i> [Guinn]
Subtheme: <i>Sentiment for Farm/Ranch Life</i>
<i>"It's like there's just this tenacious desire to keep doing what you're doing because you really, really, really like living this way and you like the food you get and what it affords you, or you like the process of growing so much, almost to the point of complete illogic. Or you're in love with the parcel of land or the fact that it's been in your family for five generations, and you just mentally can't let go of that regardless of whether it has any obvious wisdom to keep going anymore."</i> [Eli]
<i>"There's something in me that I don't want to leave this life. I don't even know why... there's something so peaceful and kind of real about working in... dirt, water, and sun."</i> [Presley]
<i>"The big thing that people don't understand is that we're losing farmers every day. We are losing them to suicide, but we don't see that because... farmers can make a suicide look like an accident... I had a father who dealt with huge depression issues. Farmed his whole life. He was just absolutely beaten down. I'm looking at trying to do less, to get my mental health and my physical health back around."</i> [Callan]

requisite of the agricultural lifestyle. The sub-themes, supported by quotes found in Table 4, were *Planning and Problem Solving*, *Optimism*, *Persistence/Work Ethic*, and *Sentiment for Farm/Ranch Life*.

The *Planning and Problem Solving* subtheme illuminated the creative problem solving and planning skills. Participants embraced planning, but when things did not go as planned, they pivoted to solve problems and learn from trying situations. As described by Alex, *"I learned things that I would absolutely not have known if the situation hadn't occurred. Some of the livestock I had brought into the herd, even at a young age, showed multiple spots of cancers on the carcass. That changed my behavior moving forward for the livestock brought in from that specific location."*

The subtheme, *Optimism*, depicted a resiliency trait of looking for the positive even in the face of overwhelming problems. As stated by Eli, *"I remain optimistic... when I talk to people and when we do farm tours and they just go, 'How do you do this?' I go, 'It's my nature to be optimistic.'"* One participant (Alex) described a realistic perspective: *"I feel being able to be realistic and acknowledge, not everything will go smoothly, and not having unrealistic expectations to production and events was really able to help me."*

Persistence/Work Ethic as implied by the name of the subtheme depicted the tenacity of the producers to persist through the day-to-day, relentless work required of farmers and ranchers. As stated by Jordan, *"You just push. Even though you don't feel like doing it, you got to get up and do it."*

Table 5. Supports and resources: participant quotations.

Subtheme: Agriculture-Specific Resources
<p>"There is a really great community. When we are able to go to farm bureau events or like pork forums, it's always the best people there. And so I think those things keep me inspired and the successes that we have. When we started direct selling our pork and we try to get their reviews back, the people loved it. I mean, that's inspiring that we're able to feed people and they're able to like enjoy a product that we made." [Ollie]</p> <p>"We also tied up the with extension office where they assist us with herbicides to control noxious weeds, which it seems like it's a never-ending battle. They tell us that, 'You use this X, Y, Z herbicide,' and we should be able to knock this Russian knapweed out." [Reese]</p> <p>"Where I get a lot of my support is I'm in a coaching group that is just for farmers. And while it's international in scope... You know, we've got a, a Scottish farmer who grows some sort of cows and we've got a farmer in Hawaii. I mean, we're all over, but we're dealing kind of with the same stuff. And then the leader of it has been amazingly supportive." [Eli]</p> <p>"Things were going quite well, and that's thanks to Extension." [Alex]</p>
Subtheme: Family, Neighbor, and Community Support
<p>"... during spring branding and fall weaning, we will have friends and neighbors come for a barbecue and spend the day helping." [Reece]</p> <p>"My relationship with my parents was toxic to put it mildly. They didn't realize that, but from where I stood it's like, I was good for them, they weren't good for me, I guess, would be how I would sum it up. Their level of need just went up and up and up and my stress levels along with it. It was just sort of like a slow game of attrition where things would happen." [Eli]</p> <p>"I would say that the biggest strength that we have knowing that we are not control, that it is not up to us. God is in control. He has a plan, and we trust in Him, so that's not really our strength, but that is our hope, is in Him." [Shiloh]</p> <p>"When the famer dies, then everybody comes in and harvests his crops that year and gets them to market so that the family has a chance to adjust." [Devon]</p>
Subtheme: Medical and Mental Health
<p>"I mean, I don't know of anything, any place. If I was really stressed up, I don't know who I would go to in my community. I think I probably just talk to friends about it and just kind... I mean, I don't go to any kind of professional or any kind of a local, like a county person or anything, but I think if I was in a bad place, I would go to maybe my local doctor, talk to them to see if they have any tips to deal with the stress." [Dakota]</p> <p>"Honestly, it's going to take a lot of changing their minds [to get them to seek counseling]. There's stigma in seeing a psychologist. A bunch of older guys... they go to the vet when they need to see the doctor... You've got a long ways to go before they are even trusting a medical doctor. I know, like my dad sees a counselor, but not often enough. He's on antidepressants. I'm not. I just had a bad experience with them and went through my training and found cut out certain things. I don't drink anymore, so that is a huge factor. You know, a lot of these guys drink and I think that causes a lot more of the depression than anything." [Frankie]</p> <p>"Through and after my divorce, yes, there was a support therapy, I guess. I don't know if she thought it was therapy... Counseling, that's a better word, yeah. During and after the divorce, yeah. We had counseling and then also for my kids, they were part of the divorce." [Casey]</p> <p>"I finally turned to seeing a psychiatrist when my general doctor just wasn't helping me enough with... I mean, I know that I needed medications or I wasn't finding the right medications to be helpful enough for what was happening to me." [Eli]</p>

Sentiment for Farm/Ranch Life was a subtheme that referred to the sense of meaning and the nature of the emotions the participant experienced in living the agricultural life. The sentiment for the farm/ranch life ranged from uplifting to discouraging. Most participant quotes leaned positive.

Sammie disclosed:

I bought a piece of land that had been practically abused for 40 years. I'm bringing it back to life, aerating it, putting plants on it, bringing the soil back... I've also become a wildlife habitat for monarchs and pollinators. Just giving the land a chance to be what it's meant to be, that gives me a great deal of pleasure."

Managing physical injuries and mental health challenges were associated with less positive sentiment. Reflecting on mental health, Blake shared: "... the depression lasted four years and has made me feel like I don't want to do this. I don't want to farm any more ..."

The quotes supporting Traits and Adaptations underscore a positive relationship between resilience and optimism, planning and problem-solving skills, persistence, and work ethic. The findings show that these traits, along with an attitude of positive sentiment for the agricultural life, promote resilience or perhaps serve as coping mechanisms for challenging situations.

3.4. Theme 4: supports and resources

Supports and Resources reflected the resources and assistance that helped participants when they were faced with stressful situations. Supports that for some bolstered occupational resilience included family, neighbors, faith communities, agriculture-specific resources such as Extension and Farm Bureau, and counseling and medical services. The subthemes for *Supports and Resources* included *Agriculture-Specific Resources*, *Family*, *Neighbor*

and Community (including faith groups), and Medical and Mental Health. Examples of supporting quotes for Theme 4 are found in Table 5.

Agricultural-Specific Resources identified by participants included Extension, Farm Bureau, cooperatives, coaching groups, and structured educational programs. No negative quotes were coded on these supports, and participant quotes often expressed gratitude, as is evident in Table 5.

Participant support from *Medical and Mental Health* professionals was mixed, with some participants appreciating counseling and others indicating no interest in mental health services. The apprehensions about mental health services included stigma, long wait lists, lack of understanding of the agriculture lifestyle, lack of access, and trust issues. Counseling was viewed in a positive light when participants were able to access a counselor who understood agriculture.

The *Family, Neighbors, and Community* subtheme findings reflected both positive and negative experiences with family members, neighbors, and the broader community. Participants found family to be encouraging and helpful or damaging and unhelpful, with few neutral responses. Similarly, neighbors were sometimes, but not always, reported to be key sources of support. Alex indicated, “I have neighbors within two miles distance that are more than willing at the drop of a hat to assist ...” Neighbors particularly stepped up in emergency situations. Yet the findings of the current study suggest that while community support is critical, it is not a constant for all farmers and ranchers. Some participants expressed isolation from, or competition with, neighbors. Not all participants had neighbors. Kit shared, “We’ve got a little community of workers here, but ... there is no other larger community around that we can rely upon ... there’s nobody here. We are in the middle of nowhere.” Also, some participants experienced disconnectedness with neighbors. “We’re new to this area, and not always are people very welcoming” (Bailey).

For those who received support from family and community, the central type of support was instrumental (physical or logistical) though some participants reported receiving emotional support. Related to depression, Blake reflected: “The biggest support was a neighbor ... [who had] experienced

severe depression ... he would always call me and find out how I was doing.” An expectation of reciprocity, an unspoken norm that eventually the receiver of the help will reciprocate, was evident in the data.

Resilience was strengthened when participants had access to (and elected to utilize) support from agricultural organizations, neighbors and family, though not all producers had a gateway to these supports. Resilience was fostered by counseling when participants were able to overcome the stigma and find a counselor with an understanding of agricultural life.

4. Discussion

The study of resilience is important, as resilience is recognized as a significant contributor to work performance and personal life satisfaction. Investigations of resilience in agriculture are often interdisciplinary and have been conducted through various approaches including resilience of the agricultural system to policy¹², Career Motivation Theory¹², the “bounce back” approach⁴², and positive psychology⁴³.

The theoretical approach used in this study of small farm producers in the unique agriculture culture of the Western United States was occupational resilience, an interactionist approach where resilience is not fully explained by personal traits bolstering the individual during acute stress, but rather a result of a dynamic interaction between the individual and the agriculture milieu⁴⁴. Aligned with Windle⁴⁵, we conceptualize resilience in agriculture as a dynamic process rooted in the context of agricultural life. We chose this approach because we believe that the individual traits of producers interacting with the demands, conditions, and supports in agriculture are best understood through the work/non-work interface and the wider lens of the context of agriculture life.

Our findings suggest that participants portrayed resilience as intricately intertwined with the distinctive features of the agricultural culture, suggesting that the meaning of resiliency changes by occupation, as posited by Kossek and Perrigino²⁴. Reflecting research suggesting that context matters²⁶, our results did not fully parallel the

agricultural resiliency findings from other countries.

The study revealed four themes. *Agricultural Life* focused on issues of the co-working with families, work/home separation, multigenerational farming, and work schedule control. *External Stressors* depicted agricultural policies, the changing environment, and economic and financial stressors as common triggers among participants. In the theme, *Supports and Resources*, our study revealed that neighbors can be a critical resource, which aligns with research showing that in rural and isolated settings compared to urban settings, social support and cohesion are significantly related to robust coping mechanisms⁴⁶. The *Traits and Adaptations* theme uncovered that alongside persistence and optimism, *Sentiment for Farm/Ranch Life* was an important to resilience. Ruth Gasson's⁴⁷ seminal work revealed the four values that drive agriculturists: financial interests, maintaining social traditions, creativity, and enjoyment of the lifestyle. Our findings reflected Gasson's values, often with interactions between them.

One of the contributions of the study to the broader knowledge on resilience is a deeper understanding of the critical nature of the work – nonwork interface. From prior research we recognize that the muddying of boundaries between work and nonwork precipitates strain due to the inability to detach from work⁴⁸. In some hierarchical occupations policies and family-supportive supervisors create boundaries to lower work – home conflict⁴⁹. Without the external scaffolding, in agriculture the work-home balance is left to the producer to manage. Our participant interviews intimate that work on the farm markedly overshadows attention to home life. Work – home balance on occupational resilience in agriculture needs further investigation.

Though prior research indicates that neighbors are the primary support system for farmers, our findings were more equivocal. Research conducted in Australia found that the community served as a coping resource, with social support and the sense of belonging acting as protective factors^{27,29,30}, a finding that was consistent with research in Wales and Australia²⁷. Though our participants recognized the potential for neighbors and community to bolster resiliency, they also noted the unraveling of agricultural communal norms and competition with

neighbors. Reciprocity, or lack of reciprocity, may be a factor impacting communal orientation, as it was unclear if the motivation for prosocial behaviors toward neighbors was duty driven or voluntary. In a metaanalysis of the impact of prosocial motivations on work outcomes, Liao et al⁵⁰ found that when the prosocial action is motivated by discretionary (voluntary) behavior there is a positive relationship with work outcomes. The findings were less positive when the motivation was duty or obligation.

4.1. Recommendations to enhance resiliency

Mental wellness education needs to be made more accessible to agriculturalists, both in terms of content and the delivery modality. Funding to develop tailored education and outreach is needed. According to recent research conducted with agricultural producers throughout the Western Region⁵¹, producers much preferred online methods of receiving wellness and stress management information over other modalities. Funding that would support the creation of more online education would increase the likelihood that producers would receive this information. Second, since stigma is often associated with seeking counseling and producers mentioned preferring to seek help from physicians, the delivery of integrated care (short-term behavioral health interventions delivered during medical appointments) in primary care settings may be another effective mechanism to increase access to care.

A third recommendation is the allocation of additional funding for mental wellness and resiliency programming specifically tailored to farmers and ranchers. For instance, programming on managing work – life balance in agriculture, with a focus on farmer and rancher couples and their families. Mental health programming specific to the agriculture sector should also include the delivery of technical assistance in agriculture planning and creative problem solving. Incorporating these types of programs into already existing services provided through USDA offices in states and counties would increase access to programs.

A fourth recommendation is to foster more effective marketing efforts for national resources such as the AgriStress Helpline and the FarmAid Assistance Hotline, both which have English and Spanish

resources. These services might also be linked to the 988 hotline to provide agricultural communities with connections to people who better understand stressors relevant in their communities.

4.2. Limitations

As an overall limitation, qualitative studies are not intended to be generalized. The participants were recruited only from the Western United States, rendering the findings to not generalizable to producers in other regions. The ethnic diversity of the participant pool was another limitation. Participants who left farming and ranching were not included in our sample, leading us to the question, how would the results have differed if we had interviewed former agricultural producers? Another limitation was that the survey from which the interviewees were recruited was administered online, which omitted any farmers or ranchers with difficulty accessing computers or an internet connection. A final limitation was that the research team was biased toward a common belief in the importance of resilience, though to the extent possible the research team bracketed their beliefs to focus on the meanings revealed by participants.

5. Conclusion

Our findings support that increasing social capital is an important mechanism for building/strengthening resilience. Our data illustrates that those with strong social relationships are able to cope more positively with the stressors. We learned that co-working with family and multigenerational family farming as well as neighbors are equivocal as sources of resilience, with these social interactions functioning to either foster or deplete resilience.

Policies and regulations, referred to by one participant as “death by a thousand cuts” were found to be a considerable source of strain. A final conclusion is that the Integrated Occupational Resilience Framework posited by Kossek and Perrigino is a good fit model for researching agriculture occupational resilience.

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