

WHO FARMS THE FUTURE? PRODUCING THE NEXT GENERATION OF  
AGRICULTURALISTS

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## ABSTRACT

### WHO FARMS THE FUTURE? PRODUCING THE NEXT GENERATION OF AGRICULTURALISTS

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The proportion of young farmers and ranchers (ages 18-35 years old) within the agricultural workforce has been declining, raising concerns about the sustainability of the food supply. To gather more tools for solving this problem, this thesis research seeks to understand why young people want to work in agriculture by studying how they develop aspirations for an agricultural career. This thesis employed both survey and interview processes to gather data on how participants think about the field of agriculture in the context of both the challenges and opportunities for entry. Participants were asked how wide range of factors contributed to their aspirations for working in agriculture including developmental experiences, social support, economic considerations and perceived personality traits. The topics explored in this study were selected to investigate the socialization processes behind how young people build value and distinction into an agricultural occupation. This research found many socialization processes at work but that most importantly, individuals need to be exposed to agriculture in a career context. Individuals require socialization to agricultural career options and their attainability in order for them to consider such a career for themselves. Additionally, the study concluded that the perceived lifestyle of agriculture to the individual was an important

draw toward an agricultural career. This indicates a profound value is placed in the agricultural lifestyle for many young people- a value that exists outside of strictly economic considerations. Furthermore, the perceived lifestyle of agriculture appears to be an important part of both individuals' habitus in the study as well as the shared habitus of young agriculturalists as a group. While this study concluded that a variety of socialization and value-building processes take place for individuals who aspire for a career in agriculture, future work should examine the degree and type of agricultural socialization that is most useful to developing a sustainable interest in agricultural careers amongst young people in a larger sample size.

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## INTRODUCTION

In the United States, participation rates in agriculture are in decline, with less than 2% of the U.S. population employed in agriculture today, compared to 41% in 1900 (USDA 2014). While some decline in total agriculture participation is expected due to the changes that industrialization brings to the national economy and agricultural sector, the declining share of young farmers and ranchers within the sector is garnering growing concern. The growth rate of young farmers is not matching the aging rate of established farmers. Farmers over 65 now outnumber those under 35 by over 6 to 1 (Dobroth 2019.a, Hotz 2019). According to National Young Farmer Coalition (NYFC) Vice President of Policy and Campaigns Sophie Ackoff, this leaves the possibility that when many people drop out of agriculture shortly in the future there will not be enough young farmers to replace them (Hotz 2019). The implication of aging farmers worldwide include fears for future productivity and stability of the food supply both globally and in the U.S. (Whitebrook 2016).

Most experts agree that ever more challenging economics is creating barriers for young people looking to enter the field and that this is contributing to the shortage of young farmers. Key challenges for beginning farmers and ranchers are frequently cited as access to land and government programs, including credit, amidst rising startup costs (Ahearn 2016.a, Dobroth 2019.b, Reiley & Van Dam 2019, Hotz 2019 Ahearn and Newton 2009). Conversations in the media with young farmers and ranchers have

focused on much the same topic: the struggle to access credit for incredibly high startup costs in the face of uncertain markets for the products grown (Masters 2011).

While these economic barriers to young farmers and ranchers have been widely identified in the U.S. agriculture system, little research has been conducted on why there are still some young people seeking to enter agriculture despite these challenges. The idea for this research was born from my own experiences as a sixth-generation farmer and active member of the young agricultural community in my state, as well as my interest in anthropological inquiry. Being involved in the agricultural community both as a farmer and an advocate, I see many young individuals in my own generation aspiring to be involved in agriculture, despite acknowledging the substantial barriers to farming and ranching. That observation, coupled with my holistic anthropological background, prompted me to investigate why and how young people develop aspirations for agriculture in spite of the monumental challenges that they know lie ahead of them.

This thesis seeks to explore this phenomenon by framing how aspiration for an agricultural career is developed through the lens of value-building. Examining this, we can understand why individuals value an agricultural career enough to pursue it despite immense challenges and how they develop their sense of value around this career. By studying how young people develop their aspirations for an agricultural career this research seeks to understand why young people want to work in agriculture. It explores how participants think about the field in the context of challenges and opportunities for entry, and what they say contributed to their aspirations for working in agriculture. This

thesis employed both survey and interview processes to examine the practice of agriculture by investigating the combined effects of objective conditions, internal interpretations and social action as outlined by Bourdieu (1987) and further elaborated on by Raedeke et al (2003). Bourdieu suggests it is through the examination of practices and thereby field and habitus that one can begin to understand a social group and its operating logic. This research examined the practice of agriculture/farming/ranching and thus explores the field and habitus surrounding young agriculturalists and how they build distinction and value into their aspirations for an agricultural career.

Based in Bourdieu's idea of distinction, which indicates that values and taste are conditioned through socialization and reflect a symbolic hierarchy distinguished by the individuals within that hierarchy, the idea of habitus, field and socialization can explore how individuals build value into agricultural careers despite the challenges to such a career (Allen and Andersen 1994; Bourdieu 1987). Ideas of field and habitus indicate that the environment and the way in which individuals are raised play a significant role in how that individual perceives and categorizes the world. The purpose of this thesis, then, is to investigate how individuals come to value/find distinction in an agricultural career. What processes of socialization and social reproduction take place? And how does the habitus and field of both the individual and the greater field of agriculture (and the shared habitus of agriculturalists) impact aspirations for an agricultural career?

To investigate these ideas, the state of Colorado was used as the setting for a case study. This thesis first includes a review of scholarly and popular literature surrounding

the topic of young agriculturalists in the United States. Despite the variety in types and methods of agriculture in the state of Colorado, for this thesis the greater agricultural community of the state is treated as a single, albeit diverse, social group united by their occupational field. Then, the research methodology is explained, which includes a state-wide survey and interviews. Finally, the results are interpreted and discussed along with implications for further research.

## LITERATURE REVIEW

The following is a thematic literature review of scholarly and popular media sources relevant to investigating how individuals build value in an agricultural career. This literature review explains what this thesis examines and the theoretical background of the investigation as well as why we are studying the practice of young people aspiring to an agricultural career. I will explain why this investigation is relevant to the conversation around declining numbers of young farmers and ranchers. This review also examines the literature surrounding declining young agriculturalists in the U.S and provides context of the current U.S agricultural structure. And lastly, it describes the study's location and agricultural significance.

Young people's motivations for an agricultural career: theoretical background.

There are three main anthropological concepts which lend themselves to the examination of this thesis's chief question which concerns understanding why some young people want to farm despite immense challenges. As mentioned, pursuit of this difficult career indicates valuation of the career by the individual pursuing it. How individual values are developed/reproduced can be examined through socialization, practice theory (also known as a theory of practice), and social reproduction. Socialization is the process through which people develop their culturally patterned understandings, behaviors, emotional orientations and values (Chapin, Ouardani and



Barlow 2018). This is not passive- it is an active process through which novices develop their patterns of behaving, thinking and feeling through interaction with other actors. These interactions continue throughout the lifecourse of the individual and can occur as part of rituals, involvement of structured institutions or informal, everyday activities. The process of socialization occurs neither solely through the agency of humans and their innate abilities and experiences nor only through their environments (Hoppner 2017). Instead, humans, knowledge and environments together are all essential components of the socialization process.

Practice theory originates from Pierre Bourdieu's ideas on the relationship between human actors (agents) and social structures. Social structures do not exist in isolation from social actors but are created, maintained and transformed through the social relations made possible by a group's operating logic, known as its habitus (Green, Hodge, Valdivia 2003). Habitus is the internal, "taken for granted" shared meanings and behaviors utilized by individuals within a social group. It is the internalization of the external by which basic pieces of social life (like gender, race, class, ethnicity, and notably for this thesis, occupation) come to guide our attitudes, perceptions, dispositions and values in ways in which the individual is seldom aware of (Bourdieu 1984). Important to the concept of habitus is the idea of "field." Field is an external element; it consists primarily of social relations and arenas of production (Green, Hodge, Valdivia 2003). The field interacts with habitus to shape the specific attitudes, feelings and dispositions that make up and reproduce a given habitus (Bourdieu 1984). The dialectical

relationship between habitus and field is embodied by “practices,” defined as an individual’s actions. It is through the examination of practices along with habitus and field that one can then begin to understand a social group and its operating logic (Green, Hodge, Valdivia 2003).

Social reproduction ties in with both of the previously discussed concepts. How interest in agriculture is generated or socially reproduced is one way to examine this thesis’s main question of why some young people want to be involved in agriculture. Social reproduction seeks to make sense of societies continuity over time as recognizably the same entity (Weiss 2021). Social reproduction theory traces a given fundamental element of societies resources (in this case, agriculture as a career) and goes on to ask how this element reproduces itself. In particular, social reproduction is useful in identifying and explaining the tensions between the logic that reproduces a given element of society and the well being of the individual within the population. This tension is particularly poignant when examining how agricultural (re)production is accomplished and the well-being of individual farmers/ranchers and their farms.

Why investigate young peoples’ motivations for agricultural careers?

### Declining farmers & age distribution inequalities

As discussed above, the total number of American farmers is in decline and the aging population of farmers has started causing concern for the stability of future

agricultural production in the U.S. It is part of a larger, worldwide trend of aging farmers, leading to fears for future productivity and stability in food supply (Whitebrook 2016). In 2009, 63% of established U.S. farmers were 55 years or older (Ahearn & Newton). Nationwide, only 5% of all farmers or ranchers were under 35 years old. The average age of American farmers continues to increase. In 1982 the average age was 50 years old, in 2017 it was 57.5 years (Dobroth 2019.a). In a country where less than 2% of the population farms or ranches today and each farmer already feeds 155 people, continued loss of participation in United States agriculture has serious impacts on continued agricultural productivity and food security (Bertone, 2012; Whitebrook, 2016).

In the US, policy makers have indicated it is a national security policy priority to have a safe, stable food supply; a goal threatened by declining numbers of young farmers (Ahearn 2016.a). The number of young farmers and ranchers in the United States has been steadily declining over the past three decades, indicating lower entry of young people into the industry (Ahearn 2016.b). Total numbers of new entrants of any age into the industry have also been declining for some time. During the period from 1997 to 2012, only about 22% of farms were considered “beginning farms”, a decline from 38% in 1982 (Ahearn 2016.b). “Beginning farms” are farms that have been operating for less than 10 years and include a wide range of age demographics- they do not necessarily indicate farms operated by young farmers. In fact, according to the USDA, only about 19% of beginning farmers and ranchers are considered “young farmers and ranchers” (Ahearn & Newton 2009; Ahearn 2016.b). The USDA defines “young farmers and

ranchers” as those between 18 and 35 years old. Many beginning farm operators are, in fact, older. The majority of beginning farmers have a median age range of 35-54 years old (Ahearn 2011). While this is younger than the national average age of all farmers (which sits at over 55 years old), it still is not considered “young” by the USDA (Ahearn 2011). This continued decline in the share of young farmers and ranchers has been experienced despite the USDA providing credit and incentive programs for beginning farmers and ranchers since 1992 in an attempt to alleviate economic obstacles (Ahearn & Newton 2009).

The US farmer population is already small and growing increasingly unstable, therefore continuing to have fewer and fewer young people replacing these aging farmers and ranchers is worrisome, as it will lead to continued decreases in the overall farming population. Continuing to put the food supply into fewer hands is not secure, stable, or sustainable. Additional impacts of decreasing numbers of farmers is the degradation of rural communities. As the number of farmers in an area decreases, the local businesses dependent on them also decrease and as a result, fewer job opportunities remain in rural communities (Semuels 2019). Farming maintains an economic base in rural communities, and as those farms struggle and decrease, so do their rural communities. To help answer “why are there not declining numbers of young farmers/ranchers?” this thesis has determined that it is prudent to examine why young people do want to farm and from there then be able to address more holistically why young people either do want to farm or do not want to, or can not farm.

### The changing landscape of agriculture

The U.S agricultural system and rural life went through tremendous change in the 20th century, much of it tied to the industrialization process of agriculture, as well as demographic shifts in the country as a whole. Understanding this process helps to illuminate why the portion of the population involved in agriculture has decreased so dramatically as well as suggest why a falling proportion of those involved in agriculture are under 35 years old.

By 1900, the household economy model of the 19<sup>th</sup> century, where goods produced were then bartered locally or kept for household use, had already given way to 20<sup>th</sup> century market capitalism where people were producing goods to sell in more distant markets (Tindall & Shi 2013). This marked a transition in the U.S from an agrarian society to a capitalist one (Tindall & Shi 2013). The end of the 19<sup>th</sup> century and into the early 20<sup>th</sup> century saw high urbanization rates causing a huge population shift from rural agrarian life to a more urbanized setting (“*The United States Senate Committee on Agriculture, Nutrition and Forestry 1825-1998*” 1998). In 1935 when the number of U.S farms peaked, about half of the U.S population lived in rural areas; today less than one fourth live in rural areas (USDA 2019). Part of this was driven by increasing job opportunities in American manufacturing taking place in cities, but was also driven by shifting land availability. Starting around 1900, the “cheap land” out west made available by the 1864 Homestead Act and forcible removal of Native Americans was becoming less available (Tindall & Shi 2013). The landscape of the U.S. and American agriculture was beginning to change.

Agriculture in the early 20<sup>th</sup> century was labor intensive and took place on many small and diversified farms (USDA 2019). An American farmer in 1900 produced on average five different types of commodities: they might care for three or four (or more) different crops, a small herd of dairy cattle, and a sow and piglets, much the way farmers had been operating for centuries (Dimitri, Effland & Conklin 2005). This required a broad knowledge, many types of generalized tools and lots of manual labor. During the 20<sup>th</sup> century, U.S agriculture industrialized: it specialized, mechanized, and consolidated.

Specialization, aimed at increasing efficiency by narrowing the range of tasks involved with production, reduced the average farm production from 5 commodities in 1900 to just over one commodity per farm in 2000 (Dimitri, Effland & Conklin 2005). Technological innovations lead to the mechanization of many processes which had formerly been done by hand, reducing the need for farm labor. In 1900, 41% of the U.S population was employed in agriculture compared to just 2% in 2000 (Dimitri, Effland & Conklin 2005). Technology also led to increased availability of chemical and pharmaceutical inputs which reduced crops losses, helped mitigate risk and created more uniform products that were easier to market (“Industrialization of Agriculture” n.d.).

Consolidation represented the shift to fewer, larger farms. Other agricultural sectors also consolidated throughout the 1900s: food processors, input suppliers and equipment manufacturers (“Industrialization of Agriculture” n.d.). Consolidation can be explained in part by the increasing non-farm employment opportunities during the mid-1900s: as more opportunities for better paid, steadier work became available, more

former farmers sold their farms (USDA 2019). Often they sold to existing farmers and neighbors, thus making those remaining farms larger and more prosperous (USDA 2019). This is further illustrated by the fact that the number of farmland acres in the U.S did not decrease sharply during the 20<sup>th</sup> century the way the total number of farms did, indicating a growth in the size of each remaining farm. USDA data shows this trend: in 1935 the average farm size was 155 acres, in 2017 it was 444 acres (USDA 2019).

Consolidation has, on many fronts, both assisted farmers and harmed them. For some farmers, growth and consolidation of farm acres have allowed them to take advantage of the principles of economies of scale. They can spread some production costs, like technology and equipment costs and labor over more acres and see greater profit margins. For others, consolidation has made it difficult to be profitable, or even to get started farming in the first place, as will be discussed in later sections.

The final hallmark of industrialized agriculture in the U.S is market concentration. While farms themselves have not experienced much market concentration, as 98% of farms are still independently family owned and operated, much of the food industry has seen large amounts of market concentration (Farming and Farm Income 2022). Today, just four companies account for 82% of beef slaughtering and packaging, and four companies account for 42% of supermarket sales (“Industrialization of Agriculture” n.d.). Market concentration has resulted in detrimental price control for many farmers (Semuels 2019). In some areas, prices are 40% lower than they were just six years ago, for

example, milk prices in Wisconsin. There, concentration in milk processors has led to price fixing that does not reflect rising costs of production for farmers (Semuels 2019).

#### Reasons for farm population declines

After peaking in 1935 at 6.8 million, the number of US farms fell sharply until the 1970s, when it has leveled off into a slower, steadier decline still being seen today. In 2017 there were 2.05 million farms in the US (USDA 2019). The falling number of farms during this period was largely reflective of growing productivity within agriculture (fewer farms today can produce more than farms in the 1930s did), and the increase of non-farm employment opportunities around the country. Some also blame the reduction on changes in US policy from the protective price floors in the post-1930s New Deal era to significant rollbacks in government support through the 1970s (Semuels 2019).

While industrialization in US agriculture has brought tremendous gains in productivity, efficiency and stability of the nation's food supply, some of the factors contributing to these positive changes have presented a double-edged sword; they have created conditions which make it harder and harder for farmers to stay in the industry. The process of industrialization has brought some expected changes to the U.S agriculture system: industrialization causes an expected decrease in the number of people in the agricultural workforce. It is expected that farms in a system of industrialized agriculture will grow somewhat larger and more specialized. Technology developed chemical fertilizers that saw rapid adoption in U.S agriculture throughout the 20<sup>th</sup> century due to their ability to increase crop yields ("Industrialization of Agriculture" n.d.).



Chemical pesticides were also adopted during the period for their ability to reduce crop losses and create more uniform products. However, increasing monocultures from specialization in some high agricultural output areas, coupled with increasing reliance on chemical inputs due to the reduction in biodiversity has been credited with negative environmental impacts as well as causing higher input costs to farmers over time (“Industrialization of Agriculture” n.d.).

There are thresholds at which these expected trends exceed an acceptable level and become alarming and unsustainable. The US agriculture system is approaching such a threshold in which further declines in the agricultural population will potentially cause major disturbances. The declining number of young farmers and ranchers is a key indicator that we need to address this issue.

It should be noted that like post-industrial economies, post-industrial agriculture is changing, developing and improving as we speak. Consumer demand for more locally grown and farmer-friendly products is increasing, helping provide opportunities for farmers to see a greater share of profits and better invest in their operations’ (and communities’) long term success. Growth in marketing channels for local food since 2007 indicates increased demand for those products: regional food hubs increased by almost 300%, farmers markets over 200%, and schools with farm to table programs grew by 400% (Purdue University n.d.). From 2008 to 2014, U.S local food sales increased from \$5 billion to \$12 billion annually (Hesterman & Horan 2017). This increased demand for products that can directly benefit farmers and help stabilize their income and

allow for more reinvestment in their farms is encouraging moving forward, despite the many structural barriers that still exist.

Additionally, changing best management practices are increasingly focused on soil health, utilizing modified-input controls (such as cover crops, rotational cropping, low-till/no-till), efficient water delivery systems and precision agriculture (Natural Resource Conservation Service (NRCS) 2022). Farmers are applying fertilizers at variable rates across fields to deliver only the amount of nutrition necessary on specific areas of the field, reducing excessive runoff and saving input costs. They have increasingly utilized conservation tillage practices to reduce erosion and bolster soil health. During the USDA survey period (2013-16) 70% of US cropland had conservation crop rotations and farmers increased their use of structural practices to better utilize input applications and increase yields (this includes terraces, tree-line breaks, and grassed waterways). It is possible the benefits of these changes could contribute to more favorable conditions for farmers and ranchers moving forward.

#### Young farmers and economic challenges

We have established contributing factors behind the decline in the farming population, and now turn to examination of why there is a particular decline in the proportion of young farmers. There is an abundance of proposed reasons for the decline in young farmers, many centering around the economic challenges of getting started in farming. Most in the field will agree on two main economic factors: high startup costs and a lack of available, affordable land. A 2009 report based on USDA data concluded

that primary obstacles facing beginning farmers and ranchers were high startup costs and lack of available land (Ahearn & Newton). Many conclude that the high cost of land prices out young farmers (CNBC 2014, Ackoff et al 2017, Masters 2011). From 2004 to 2008, farmland inflation rates increased by about 150% nationwide (Weingarten 2019). The national average price for farmland is \$3,040 per/acre, with many states averaging well over \$10,000 per/acre. Part of the problem is more investment groups are buying farmland and helping to drive up values beyond those that farmers can afford: one group of pension funds states that its members now hold three times the number of agricultural properties as they did a decade ago (Charles 2020). The value of those properties has quintupled in that period. The National Young Farmer Coalition agrees that land access is the number one challenge for young farmers currently farming, and the biggest barrier to aspiring farmers preventing them from entering the industry (Ackoff et al 2017).

The National Association of Agricultural Educators' Executive Director Jay Jackman agrees that the price of doing business is keeping the younger generation at bay (CNBC 2014). He states that unless one inherits land, startup costs are very high, in addition it is hard work and the uncertainty of the weather adds to the burdens. Interviewees across the nation agree that land acquisition has blocked them on many occasions and in a variety of ways, including prices aimed at developers or bigger established farmers, inability to access purchasing credit, or flat out lack of land available in the needed area (Hotz 2019, Masters 2011, Weingarten 2019).

High land costs and availability restrictions are just the tip of the iceberg when it comes to high startup costs. Equipment and labor costs are also high, and access to credit is challenging. Equipment prices have been steadily increasing over the years with sharp spikes in 2018 and 2019, due largely to increased costs of raw materials (Paschal 2019). Young farmers are riskier to lend to says Rodgers, a banker in Nebraska (Masters 2011). They also have less collateral and have need for higher amounts of capital than in the past; these factors combine to make it hard for young farmers to get the credit they need, even when prices and farm profit outlook are good.

Being high risk borrowers isn't the only thing holding young farmers up from accessing credit. Student loan debt, an increasing issue for young farmers and ranchers, can hinder them as well. Student loan debt is certainly a growing concern when in 2011, 25% of all farmers have at least a four-year degree (Ahearn 2016.b). Out of those, beginning farmers are more likely to have a four-year degree than established farmers, 34.3% of beginning farmers to 23.5% of established ones (Dobroth 2019). A case study from the NYFC's 2017 study found a young Georgia farmer unable to access additional credit for the farm due to his federal student loans (Ackoff et al 2017, Weingarten 2019). The NYFC has identified student loan debt as the second biggest challenge facing young farmers and ranchers (Weingarten 2019). Student loan debt, a challenge for many young people, is especially severe for those pursuing agricultural careers due to the low profit margins and high operating costs frequently associated with agriculture (Hotz 2019).

Additionally, the reductions in the total number of farmers has eroded the economic base in rural communities, meaning fewer rural businesses and fewer job opportunities outside of agriculture (Semuels 2019). Smaller communities and job markets reduce the ways in which farmers can pick up extra work to make ends meet, something over 50% of farmers report having to do (USDA 2019). As rural conditions deteriorate, youth and families frequently move away (Semuels 2019). This further exacerbates the challenges to young farmers and ranchers.

Challenges for young farmers are further compounded for disadvantaged populations including women and people of color. This can be attributed to a few things. Firstly, there exists a nation-wide wealth gap between white Americans and Americans who are people of color (National Sustainable Agriculture Coalition). For example, white Americans typically hold about 13 times more wealth than African Americans- this holds true across classes and income levels. This makes entering high-cost industries like agriculture very difficult. Additionally, people of color have lower participation rates in USDA programs designed to help both young and beginning farmers and farmers in general (National Sustainable Agriculture Coalition). This is attributed to several factors including outright discrimination historically and in more recent times, a lack of properly targeted outreach. There are now monies in the USDA set aside specifically for disadvantaged farmers and specific outreach programs to target those marginalized populations (National Sustainable Agriculture Coalition).

The same can be said of female farmers' historic access to and use of USDA programs: compared to their male counterparts, they historically utilize USDA programs less. In Colorado in 2017, about 42% of producers were female (National Agricultural Statistics Service n.d.). While lower rates of participation than men indicates women face unique challenges to entering agriculture, little work has been done on quantifying the unique challenges they face in developed countries like the U.S as well as what the characteristics of existing female farmers are (Schmidt, Goetz, Tian 2021). Some hypothesize that women continue to be underserved due to "...gender stereotypes, notions about what constitutes authentic farmers, assertions of gender neutrality in programming, and incorrect assumptions regarding what types of education are useful to women farmers." (Ball 2020).

#### How have these challenges been addressed and what are the remaining obstacles?

As the prior sections of this literature review attest, much attention is being paid to the fact that we have a concerningly low number of young farmers and ranchers (and farmers in general). There are multiple efforts underway to remedy the shortage of young farmers in agriculture. A full discussion on this topic exceeds the scope of this study, but it is relevant to mention and understand some of the efforts and events that have taken place and are taking place to try boosting the number of young farmers and ranchers.

Since the 1990s, various federal policy steps have been taken to try boosting the number of young farmers and ranchers in the United States. Government credit and incentive programs were established in 1992 in an attempt to alleviate economic

obstacles to young and beginning farmers (Ahearn & Newton 2009). Today, beginning farmers have access to USDA Farm Service Agency (FSA) loan programs. These programs are varied and include several types. Direct Farm Ownership loans are administered by the USDA FSA to help purchase or enlarge a farm or ranch, make a down payment on one, improve/construct new agricultural buildings, pay closing costs and protect/conservate farm water (USDA n.d.). There are direct loans financed through the USDA to assist with farm ownership down payments on loans financed through commercial lenders, ownership microloans with lower paperwork requirements, joint ownership loans, operating loans as well as loans for improving/constructing storage facilities. The USDA also offers programs that guarantee loans through commercial lenders for agricultural property purchase, operating loans and conservation loans. A certain amount of funding from these USDA programs is set aside each year for use by beginning farmers and for disadvantaged farmers. Despite these robust programs aimed to alleviate the challenge of obtaining credit for farm access, young farmers are still declining 19 years into many of these programs.

This does not address the problem of high land costs, and USDA loan programs have limits to the amount of funds they can approve. Often, the funds available fall short of the total funds needed to purchase land or equipment. Additionally, there are experience requirements that can be tough for young farmers to meet as well as challenges with eligibility for those with federal student loans. Minnesota's solution to this problem is to offer a tax credit to those property owners selling or renting land to

young farmers (Hotz 2019). This program has had good success thus far. In Colorado, to assist with attaining educational employment opportunities to meet the experience requirements for federal funding, the Agricultural Workforce Development Program encourages farms and ranches to take on interns for job experience by reimbursing up to 50% of the cost of paying the interns. This helps alleviate the challenges for farms with narrow margins to employ the help they need as well as help get young farmers experience.

Recent literature has indicated a small uptick in the number of young farmers and ranchers in the 2017 Agricultural Census. While a small increase may have been possible, it is more likely that the increase can be accounted for in the change of methods of data collection the Census employed in 2017 (Pilgeram et al 2020). Beginning in 2017, farms can list up to four “primary operators.” This change allowed for multi-generation family farms to accurately reflect who is working on them. Thus, there likely is not an actual increase in new young farmers but rather a more complete and accurate count of the ones who have already been present on farms and ranches across the country.

Despite the previously discussed steps to alleviate economic barriers, the number of young farmers has failed to rise substantially over the last 30 years. While the measures described provide necessary services and likely will be a part of the ultimate solution to boosting numbers, the need to examine why young people aspire to enter agriculture is increasingly important to finding long term solutions to the shortage.



### Case study background: Colorado agriculture

To begin investigating a topic as vast as the impact of personal factors may have on agricultural entry, a manageable area of study must be selected. The State of Colorado was chosen as the study location for this thesis primarily due to proximity to the researcher as well as to build upon the researcher's familiarity with and connections to Colorado agriculture. Colorado is also an ideal locale due to its strong agricultural roots and current agricultural industry as well as its diverse population demographics. This section provides background and context for the area of study and its suitability for the project.

#### A brief history of Colorado

Farming in the area that would become Colorado has been taking place since before Europeans landed on the east coast of North America. By about 1000 AD, formerly nomadic people in the southwest corner of Colorado were growing beans, squash and corn and had domesticated dogs and turkeys (Mesa Verde National Park n.d). Throughout the rest of the state, due to challenging climatic conditions, most tribes remained nomadic foraging societies and did not take up agriculture. Tribes whose territories are in and around the area that became Colorado include the Apache nation, Arapahoe nation, Cheyenne nation, Shoshone tribe, Ute nation, numerous Pueblo tribes, Navajo tribe, Comanche tribe, and Kiowa tribe (Colorado Department of Education 2008). Today, there are two federally recognized tribes remaining in Colorado with designated lands: the Southern Ute tribe and Ute Mountain Ute tribe.

When the Spanish established their first settlement in present day northern New Mexico (and the very southern portions of what would become Colorado) in 1610 at Santa Fe, the early settlers raised sheep and cattle as well as subsistence crops where various Pueblo tribes had been already farming for generations (Bureau of Land Management 2008). When Mexico won independence from Spain in 1821, they adopted the Spanish system of land grants-largely to safeguard against increased pressure from U.S. settlement to the East and North (Simmonds 2020). Several grants were petitioned for on behalf of multiple families (sometimes up to 40 families per grant) who then settled the land grants (Simmonds 2020). Many of these families were direct descendants of Spaniards who had settled in northern New Mexico under Spanish rule in the 1600s and continued farming and raising sheep and cattle throughout the southern portions of Colorado. When the US government took control of the area in 1848 following the Mexican/American war, some land grants were upheld by the new government, but most were not acknowledged, and their families lost their legal rights to the lands they had been formerly granted (Simmonds 2020). These lands were later re-settled and cultivated by American settlers arriving from the east. Many of the descendants from those Hispanic settler families remain in Colorado today, and some are still farming and ranching.

Gold and silver were discovered in much of Colorado's mountains in the mid to late 1800s. As mining interest in the area grew, it became apparent that a local food supply was necessary for the miners as it was not economical to import foodstuffs (Colorado Agriculture Bibliography n.d.). Thus, farming and ranching boomed in the

state as the mining did, producing food for miners and the growing settlements around them.

When the railroads arrived in the 1870s, travel and shipping to eastern cities became far easier, allowing Colorado's products to be shipped back east with ease (Colorado Agriculture Bibliography n.d.). When many mines dried up, Colorado had many diverse sources of demand for agricultural products. Many settlers in the 1880s came to Colorado specifically with the intention to farm or ranch as it was quickly discovered that Colorado had great agricultural potential, as described in this 1926 quote from Alvin Steinel "Yields under irrigation were astonishingly large, when compared with farming "back east"; nevertheless, the farmer realized that he got results only at a cost of great effort in labor and outlay, and that he could leave nothing to chance in a country where the average precipitation was about one-third of that to which he had been accustomed." (Colorado Agriculture Bibliography n.d.).

Water rights in the dry state became increasingly necessary and valuable. As wet water and water rights became scarce, late-comers tried their hand at dry land crops on the eastern plains. The high mountain areas of the state were not conducive to raising crops, but proved to be excellent pasture for sheep and cattle as ranchers increased throughout the state in the late 1800s (Colorado Agriculture Bibliography n.d.). And thus, Colorado agriculture developed into a diverse and wide-spread industry that remains important to the state today.

### Colorado agriculture today

In 2020, 48% of Colorado's land mass is in farms and Colorado agriculture generated \$7.3 billion in cash receipts (National Agricultural Statistics Service (NASS) n.d.). When one accounts for agriculture's total impact to the Colorado economy, it contributes \$47 billion and employs 195,000 people ("*Learn About Ag*" n.d.). As an industry, it is the second largest contributor to the state's economy ("*Learn About Ag*" n.d.). The diversity of crops and livestock today is far reaching. 34,000 farms and ranches cover 31.7 million acres of the state and raise everything from peaches and sunflowers to sheep and cattle ("*Colorado Ag fun facts*" n.d.). The average farm or ranch size is now 822 acres (Meyer 2020).

Around 66 percent of the state's agricultural revenue comes from livestock. The number one agriculture export in the state is cattle and calves but Colorado also ranks third in the nation for market sheep and lamb production ("*Colorado Ag fun facts*" n.d.). The state ranks number one in proso millet production-this dryland grass is utilized in bird seed and livestock feed and increasingly in gluten free foods (Colorado Proud 2019). The cool nights and warm days of Colorado's western slope make peaches and apples the top fruit crop in the state. Each year Colorado produces around 30 million pounds of peaches. Some of the highest elevation wineries in the world are located in Colorado, with 160 licensed wineries producing 2.05 million liters of wine (worth over \$45 million) at elevations between 4000 to 7000 feet (Colorado Proud 2019). In the southern part of the state, 50,000 acres of fresh market potatoes are grown and shipped from about 25

warehouses. Famous Rocky Ford Cantaloupes™ have been grown in the Arkansas Valley since 1887. Other important crops for the state annually include about 831,000 tons of sugar beets, 1 million acres of corn, 150 million pounds of onions, pinto beans (of which the State ranks 9<sup>th</sup> in the nation in production of), hay (3.6 million tons produced in 2018) and 1.4 billion tons of eggs annually (Colorado Proud 2019). The state also grows lettuce, spinach, carrots, watermelons and cantaloupes, quinoa, pears, and cherries.

The presence of Coors Brewing has spurred barley production historically and continues to drive demand for barley along with the state's 400 licensed craft breweries (Colorado.com 2022). Also of note, the state produces about 750,000 hogs every year (Colorado Proud 2019). There are also over 40 licensed aquaculture producers raising fish and 31,000 bee colonies which produce 1.5 million pounds of honey annually (Colorado Proud 2019). There is considerable breadth and diversity throughout the state in the agricultural goods produced and the methods used to produce them.

#### Colorado's young agriculturalists

Data from the 2017 agricultural census indicates that there are 5427 "young producers" in the state (National Agricultural Statistics Service n.d.). Young producers are defined by the USDA as those between the ages of 18 and 35 years old. There were also 21,157 "New & Beginning Producers" indicating producers who have been farming or ranching for 10 years or less. Taken together we can conclude that nearly 71% of new and beginning producers must be over the age of 35. This conclusion that most beginning farmers or ranchers are older than the age defined as "young producer" fits with the

national trends identified by literature in the previous sections (Ahearn 2016; NYFC 2017; Ahearn & Newton 2009).

Within the demographics of these young farmers and ranchers, 62% of them identified “Other” as their primary occupation with 37% stating “Farming” as their primary occupation (Meyer 2020). This is about on par with all producers in the state- 61% of whom list “Other” as their primary occupation as opposed to “farming” (Meyer 2020). As one can see in Table 1, the distribution of farm/ranch size is fairly well distributed however, small and very large farms are the largest categories. Additionally, there is a wide distribution of economic classes of young producers’ farms and ranches, as shown in Table 2 below.

**Table 1.** Sums up the distribution of farm/ranch size among Colorado’s young producers according to the 2017 Census of Agriculture. n=4553

Farm/Ranch Size in Acres	Number of Young Producers
1-9 acres	735
10-49 acres	1307
50-179 acres	775
180-499 acres	530
500 or more acres	1206

**Table 2.** Illustrates the distribution of young producer’s operations in regards to economic class as measured by the value of sales annually according to the 2017 Census of Agriculture. n=4573

Economic Class, measured in value of sales	Number of young producers
Less than \$1000	1172
\$1000-\$2499	466
\$2500-\$4999	414
\$5000-\$9999	457
\$10,000-\$24,999	467
\$25,000-\$49,999	312
\$50,000 or more	1285

The two largest distributions are \$50,000 or more and less than \$1000, with relatively steady distributions in the remaining categories- this indicates a diverse range of operations involving young producers. About half of producers have been operating for 5 years or less (53%), 27% have been operating for 6 to 10 years and 18% for 11 years or more (Meyer 2020). Additionally, the vast majority of young producers are aged 25 to 34 years old (72%) while just a quarter are 18 to 25 years old. As far as the types of crops and animals being raised by Colorado's young producers, the data did not have any crop or animal production numbers specific to only young producers and thus, we are unable to tell what types of products they are producing state-wide.

Colorado's young farmers and ranchers are not immune to the variety of challenges cited by other young producers nation-wide (discussed in previous sections). Challenges for Colorado's young producers include student loan debt, challenges acquiring knowledge and experience, accessing land amid rising farm-land prices and access to enough start-up capital to not only get started in agriculture but also to cover living and operating expenses (Dobroth 2019.b).

The share of young people within the agricultural sector is small and not increasing at a rate equal to the aging rate of older farmers. There may be many reasons for this including the various challenges to entering agriculture discussed above, including vast expenses, difficulty accessing resources and issues of land availability. This thesis seeks to contribute understanding to this issue by investigating what motivates young people to pursue agriculture.

## METHODS

This study utilized a mixed methods approach of both quantitative and qualitative research methods. The quantitative data collection included a state-wide online survey. Qualitative, ethnographic data collection included interviews with survey participants. This section outlines the methodological framework for this study and how data for this project was collected and analyzed. This study complied with protocols approved by the Humboldt State University Institutional Review Board (IRB approval #19-098.)

### Mixed method approach

For this study the mixed method approach was utilized to combine qualitative and quantitative data to provide a more comprehensive picture of why young people aspire towards a career in agriculture. The mixed-methods approach for this study fits somewhere between a concurrent triangulation strategy and a sequential exploratory strategy identified by Cresswell (2003). Concurrent triangulation strategy typically employs concurrent collection of qualitative and quantitative data. The results of the methods are typically integrated during the interpretation phase of research and priority may remain equal between them or be given to either approach. This study did not utilize three data sources to triangulate results with, but did apply the same principle of integrating results from both of the data types collected (quantitative data from the survey and qualitative data from the interviews).



The sequential exploratory strategy is often characterized by an initial phase of qualitative data collection and analysis, followed by a phase of quantitative collection and analysis. Priority is given to the qualitative aspect of the study and findings of these two phases are integrated during interpretation of the data (Cresswell 2003). While priority was not given to one data type in the study over the other like in sequential exploratory strategy, this thesis presents an initial phase of data collection (the survey portion), and from initial analysis of each participant's survey responses, some of the interview questions were shaped to best provide follow up information in each participant's interview.

Participants were first given an online survey They could then choose to be contacted for an interview. As surveys from participants opting into the interview were received, arrangements for the interviews were made. Some interviews were conducted before the survey collection ceased. As a whole data set, survey data was not analyzed prior to conducting interviews. However, each individual's survey responses were reviewed prior to the individual's interview in the event that clarifications or further explanation of their survey responses would prove useful during the interview. Both qualitative and quantitative datasets were used to identify and explore why young people aspire to a career in agriculture and more specifically, how various processes of socialization and other elements affect their aspirations. Specific data collection and analysis methods are discussed in detail below.

## Survey

To begin this study's data collection, a state-wide survey was created and distributed via the SurveyMonkey platform. The survey data used in this study was collected from February 13, 2020 to February 15, 2021.

A non-probability sampling method involving network sampling and internet recruitment was utilized (American Association for Public Opinion Research (AAPOR) 2013). Participants were recruited through various agricultural organizations, and the social media site Facebook with a study-specific Facebook Page. Agricultural organizations within the state of Colorado were contacted via email and asked if they would be willing to share the study with their membership, typically through electronic or paper newsletters, or direct emails. These organizations were diverse and included the state's major commodity groups such as corn, wheat, potatoes, and beef, as well as specialty commodity groups including fruit and vegetable growers, wool growers and egg producers, and two of the leading young farmer organizations in the state- the Colorado Farm Bureau's Young Farmer and Ranchers program and the Rocky Mountain Farmers Union. A special Facebook page for the study was created with the study's information and survey link. This page was shared within the young agriculturalist community in the state, as well as shared by many of the types of organizations mentioned above. One paid promotional campaign was run through Facebook according to their algorithms, targeting those between 18 and 35 in Colorado with agricultural interests. Agricultural radio networks and programs within Colorado also featured the study's information.

The survey allowed anyone between the ages of 18 and 35 years old, and living in the state of Colorado to participate, regardless of if they actually aspired to an agricultural career. Multiple tracks of the survey were designed based on if the respondent was currently involved in an agriculture career (Track 1), aspiring to be in an agriculture career (Track 2), formerly engaged in an agricultural career (Track 3), or if they did not desire an agricultural career at all (Track 4). The modern agricultural industry is large and diverse and includes many sectors beyond the farm itself. Given the large risks associated with farming and ranching directly, it is relevant to examine what sectors of agriculture young people are being drawn to or entering. The survey focused on young farmers and ranchers (in the production agriculture sector), but was also designed to track to specific questions for respondents entering areas of agriculture other than production agriculture. These other areas of agriculture, collectively referred to in this study as “agribusinesses”, could include seed and fertilizer salesmen, agricultural logistics personnel, agricultural marketers, agricultural teachers, and agricultural lawyers, just to name a few.

The scholarly and popular media sources from the literature review were utilized to identify themes of concern pertaining to declining numbers of young farmers and ranchers. As discussed in the literature review, Bourdieu’s theory of practice, along with anthropological themes of socialization and social reproduction, provided context for inquiring about individuals' developed aspirations for an agricultural career. Additionally, my involvement in production agriculture and the agriculture industry provided background and inspiration for question development and topics of concern. Multiple

choice survey questions were designed from this information. Some questions were designed to be open ended to allow participants to elaborate on their answers. To better control for the sheer breadth and diversity of agriculture and populations across the United States and the globe, as well as provide proximity to the researcher, the study formulated a case study by limiting participants to those residing in the state of Colorado.

The full survey took between 15 and 25 minutes to complete. Responses to each question were sent directly to SurveyMonkey as each question was answered. This allows for all collected data to be considered, regardless of if the survey was completed by the participant. Survey data was then examined for possible commonalities or trends. The core survey questions can be found in Appendix A. The survey included questions about:

- General demographic data (e.g. age, ethnicity, gender, income, education, location).
- If they were engaged in agricultural activities for profit and if so, the types of agriculture in which they engaged and their work status (full time, part time, seasonal etc). From here, respondents were sent down a specific track based on their answers.
- For the production agriculture track (Track 1) (farmers and ranchers) questions included: types of crops or animals farmed, how they would describe their production practices, the size of their operation, land ownership status, and how they procured their land.

- For the agribusiness sub-track (Track 1) (those involved in some sector of agriculture outside of farmers or ranchers) questions included what sector they were in, and why they chose that sector.
- For the formerly involved in agriculture track (Track 3), questions included what their involvement in agriculture had been and why they were no longer involved in it.
- The track (Track 4) for those who had no interest in an agriculture career, questions included why they had not considered a career in agriculture or pursued an agriculture career.
- All tracks of the survey for respondents either aspiring to be involved in, currently involved in, or formerly involved in some facet of agriculture (Tracks 1, 2 and 3) were asked about their biggest barriers to entry (actual or anticipated) as well as directly asked about their motives for wanting to enter agriculture.
- All survey tracks included questions about if the respondents' parents were involved in agriculture, what their early agricultural memories were and at what age they occurred, if they were a part of agricultural youth organizations, at what age they began considering (or not considering) an agricultural career, and if they feel experiences in their youth contributed to their desire to enter (or not enter) agriculture.
- All survey tracks were asked about their perceptions of social support for agriculture and if this factored into their career decision. They were also

asked about their perceptions of technology in agriculture and if this played a role in their career decision.

- All survey tracks were asked about various personality traits including their comfort level with risks, decision making, task prioritization, and handling uncertainty. Also, they were asked about how much they enjoy working with different/similar people, flexibility in tasks, and working alone etc.

### Interviews

This study utilized semi-structured informal interviews that took place between March 2020 and February 2021. Participants for interviews were recruited through participation in the study's survey. Participants taking the survey could elect to be contacted for an interview. All interviewees were individuals qualified to take the survey: individuals living in Colorado and between the ages of 18 and 35 years old. Those electing to be contacted for an interview were contacted via email to arrange an interview session. Two emails were sent to each participant that elected to be contacted for an interview and from that outreach, 13 interviews were arranged with 13 participants. Due to the ongoing Covid-19 pandemic that coincided with the field work portion of this study, interviews were conducted via Zoom video conferencing or over the phone.

With subject permission, all interviews were digitally recorded on a laptop's recording software. Audio files were then transcribed using Descript software. All transcripts were manually compared to the audio recording and edited to ensure accuracy. All interviews began with the researcher telling the interviewee about this project, and briefly about themselves. Then the interview started by confirming with the participant their general information including demographic information they were willing to share (age, gender, race/ethnicity) as well as what they did in the agriculture sector (production agriculture, agribusiness/inputs etc.) and how long they had been involved in agriculture.

Then the main content portion of the interview started with a broad general question asking the participant "can you tell me about your journey so far into an agricultural career?" The depth of answer and level of detail varied per participant and depending on those factors either a few, or many more, guiding questions were asked. These questions were designed to get a clear picture of the participant's journey into agriculture including their initial interest in agriculture, their upbringing, exposure to agriculture, how they became interested in working in agriculture, how they got started in agriculture (or were planning to get started), personality traits, career/lifestyle goals ect. Guiding questions asked were taken from the interview worksheet as needed (see Appendix B) but also stemmed organically from the flow and content of the conversation. The chief goal of the interview portion of this study was to hear from participants why, in their own words, they desired a career in agriculture, or why they rejected it. This was done to better build a holistic picture of the motivations, aspirations and obstacles

involved in why the individual aspired toward an agricultural career. Interviews ranged from 30 minutes long to an hour and 30 minutes.

The interviews yielded a collection of data about each individual's experiences with agriculture prior to entering a career in it, how they came to be interested in a career in agriculture, what their entry process was or will likely be, as well as information on their self-identified personality traits, their perceptions of agriculture, what they think society's perception of agriculture is, and what they personally think is the cause of the small number of young farmers and ranchers.

Central to the interview process of this study is grounded theory. Grounded theory involves constant comparative analysis where the researcher moves in and out of the data collection and analysis processes through multiple iterations of research (Strauss and Corbin 1994). Analysis often occurs in conjunction with the data collecting process for qualitative data since gathering meaning from the data often happens during collection, such as asking additional questions throughout the interview to get clarification (Creswell 2003; Etherington 2004). For this study, interview questions were designed to supplement data collected during the survey process. Survey data was utilized to design some of the interview questions. In many cases follow-up questions during the interview were designed and asked on the spot in response to statements the participants made in order to glean meaning from the statements or clarify the researcher's understanding of what the participant said.



Interview transcripts were analyzed using open-coding procedures to identify and organize themes. Additional attention was paid to both the content and meaning of the stories told by participants. Narrative data analysis takes many forms, including studies that focus on the content and ones that focus on the meaning (Etherington 2004). Both meaning and content were considered during this thesis' data collection and during the coding procedures in an attempt to enhance accurate interpretation of the participant's experience. Narrative content is powerful in that it helps identify themes and trends across narratives, but narrative meaning is equally important since it is derived on an individual level, opening up greater personal insight (Etherington 2004).

## RESULTS

This section will explore the results of each phase of the data collection for this study: the online survey, and then the interviews. For the survey data, relevant demographic information will be presented first. Then, socialization processes will be discussed, followed by personality factors, and closing the survey section will be data on motivations for entry, perceptions of social support and comparative data for previously identified issues. Survey track specific data will be included in the appendices. Lastly, results from the interview portion will be presented and discussed.

### Limitations and potential biases of this study

All data discussed below is self-reported and thus may or may not reflect actual characteristics or factors. Individual interpretation of questions and answer options by participants may have affected responses. There is no way to know how participants personally define the terms used in questions or in the answer options, especially those terms related to agricultural practices or agricultural occupational status. Definitions of terms such as “agribusiness owner” or “sustainable” were not provided. It should be noted that participants were operating on their own understanding of and perception of what these terms or practices are and what they mean.

It is possible that there is bias stemming from the recruitment methods of this study. Mainstream agricultural organizations were a chief vector for distribution of the

survey, although efforts were also made to identify and contact more specialty groups. Not every young agriculturalist belongs to an agricultural organization and thus, the bulk of recruitment efforts may have excluded those not belonging to organizations. To attempt to mitigate this bias, the survey was also disseminated on the social media platform Facebook and Colorado-based agricultural radio networks. While the survey was open to those not engaged in an agricultural career, the recruitment methods generally facilitated some level of agricultural involvement at the time of participation in the study and thus did not effectively recruit those who may have not considered an agricultural career (illustrated by the lack of responses to “Track 4: Never aspired to be, or have been involved in agriculture”).

Additionally, the number of participants in this study is limited and does not include a significant proportion of the total number of young agriculturalists in Colorado (compared to the number reported in the 2017 agricultural census). The coronavirus pandemic which began in early 2020 and is ongoing at the conclusion of this thesis limited the recruitment methods for this study. Recruitment was originally planned to take place largely in person through attendance of meetings and events state-wide which young agriculturalists would likely be present at. Given the pandemic situation, recruitment methods had to be adjusted to an entirely virtual format, which could have reduced buy in for the project and possibly reduced participation.

My previous experience with agriculture may have affected this study, however every attempt was made to be objective during study design, data collection and interpretation. I was raised on a family farm in a heavily agricultural community, am

currently involved with agricultural organizations and have my own small agricultural operation at the time of this study. These experiences also assisted me in this study with a solid background in which to engage in question formation, participant recruitment and interpretation/analysis.

### Survey Data

The total number of survey responses was 83. There were 9 complete but disqualified surveys; these surveys were removed due to participants falling outside of the targeted population (the targeted population are those between 18 and 35 years old, residing in the state of Colorado). Of the remaining 74 surveys, 59 were complete enough to yield relevant data. The data from these 59 surveys was analyzed for the purposes of this study and is discussed in the following sections.

After the survey-wide demographic data was collected, the survey directed participants to one of four possible tracks depending on their agricultural career status. These tracks are summed up in Table 3.

**Table 3.** Summary of the four different survey tracks participants were directed on and what the agricultural status of each track's participants are. Also summarizes the number of participants directed to each track (n=59).

Survey Track Number	Agricultural Status of Participants	Number of Participants directed to track
Track 1	Currently involved in agriculture.	51
Track 2	Aspiring to be involved in agriculture.	2
Track 3	Formerly involved in agriculture.	6
Track 4	Never aspired to be or have been involved in agriculture.	0

The three tracks (Tracks #1-#3) with responses were each examined for demographic attributes of their populations. Track #4 had no responses. Track-specific data can be found in Appendix D. Combined data from all three tracks is examined in this results section to determine why young people aspire to engage in an agricultural career and what types of things impact their desire for this kind of career. During analysis, data was sorted by a variety of demographic features (male versus female, white versus non-white) and it was found that responses and trends did not vary significantly among the different demographic groups in this study, so the results of that sorted data will not be discussed further. The following data encompasses all participants despite what track they were directed to and focuses on analyzing specific data to answer the thesis's main questions. A more complete representation of demographic data from all tracks can be found in Appendix C. Track specific data from each track is discussed in more detail in Appendix D.

#### Demographic data

86% of survey participants were currently involved in agriculture (Track 1), 3% were aspiring to be engaged in agriculture (Track 2) and 10% were formerly engaged in agriculture (Track 3). 49% of survey participants identified themselves as female, 50% as male and 1% selected either "Other" or "Do Not Wish to Disclose". 89% of participants identified their ethnicity as White or Caucasian, 10% as Hispanic or Latino, 5% as Alaskan Native or American Indian and 3% identified as "Multiple Ethnicities" or "Other".

There were participants from 21 of Colorado's 64 counties. Appendix E shows the counties represented and their agricultural output ranking. Participants were asked how far away from an Urban Center, defined as a population area of more than 50,000 people, they lived. 45% of participants live 0-60 miles from an urban center, 32% reported being 100-200 miles away, 20% were 60-100 miles from one and 1% were 200 to 300 miles away.

Interesting to note is participants' educational attainments. 98% had a high school diploma and 67% had a post-secondary certification or degree (including trade school certifications, bachelor's degrees or graduate degrees). 45% had a bachelor's degree, 13% had a graduate degree and 6% had a trade school certification. 16% had attempted some college or trade school but not completed it, and 3% selected "Other". Appendix E shows the degree fields of participants who obtained degrees. Participants are more educated than the average Coloradan: 38% of Coloradans have a bachelor's degree. And participants are almost on par with the state's advanced educational attainment: 14% of Coloradans have a graduate degree (compared to 13% of survey participants) ([choosecolorado.org](http://choosecolorado.org)). Compared to young agriculturalists nationwide, Colorado's young farmers and ranchers are similarly educated: a 2017 study reported 69% of its participants had degrees beyond high school (Ahearn et al 2017).

### Socialization Processes

The process of socialization conditions values and taste, such as valuing an agricultural career. Socialization occurs throughout a wide variety of experiences and relationships, some of which were investigated through the following survey questions.

Survey participants were asked about a variety of factors related to their developmental experiences and exposure to agriculture as well as if/how that impacted their aspirations for an agricultural career. The following sections examine the results and implications of these various factors.

### Parental Occupation

60% of survey participants' parents did not engage in agriculture for a substantial part of their income. 31% reported their parents did receive substantial income from agriculture, and 9% were unsure. This follows suit with previous literature that indicates many young farmers and ranchers do not come from agricultural families (Ackoff et al 2017). While this is significant in that the majority of young agriculturalists' parents did not participate in agriculture, 30% is still a significant number of parents who did farm/ranch. This supports the idea that social reproduction also plays a role in developing individual's interest in an agricultural career. Participants were given the option to specify what their parents did, and a little under half provided an answer. No trends or clusters of related or similar professions were identified.

### Counties of residence in youth

To investigate possible impacts of indirect exposure to agriculture during youth, data on participants' primary county of residence during their youth was collected and that data was compared to the county's agricultural output. The premise for collecting data is that in counties with high agricultural output, the chance of agriculture being

visible to youth is likely higher and thus, their socialization process is more likely to include agricultural contexts. Additionally, in areas with an agricultural presence, the collective agricultural habitus is also more likely to be present and therefore more likely to have an impact on the development of an individual's habitus. This could result in that individual's habitus being more likely to include some favorable element of agriculture. This idea of indirect exposure favorably influencing agricultural aspirations is also supported by the ideas of social reproduction.

Given that half of the counties of youth residence identified by participants were in the top 25% of agricultural producing counties in Colorado, this study does indicate that it is possible that this indirect exposure could have influenced participants' aspirations for agricultural involvement. While this data on its own cannot conclude that being exposed indirectly to agriculture in one's youth impacts aspirations to enter agriculture, it does indicate that agricultural visibility in youth could be a developmental factor for young people aspiring to an agricultural career. Further work is needed to examine what role this indirect exposure may play in young people's desire to enter agriculture. For this study, the relevance of this indirect exposure will be coupled with other studied factors in the Discussion section to understand young people's motivations for an agricultural career.

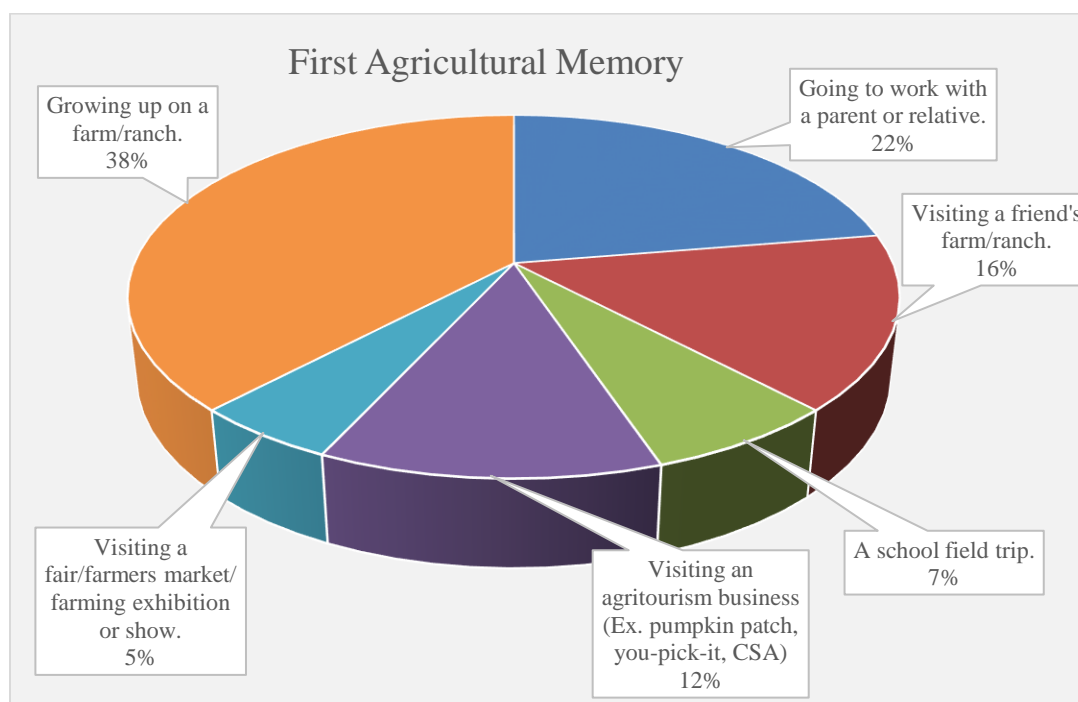
The primary counties of residence from participants' youth that were located in Colorado were documented and then the counties' agricultural output ranking was investigated. These counties are summed up in Appendix E. 42 participants said they



were raised primarily in Colorado and 20 different Colorado counties were represented in that data. Of those 20 counties, 10 counties were in the top one fourth of highest agricultural producing counties and 16 of them were in the top 50% of highest agricultural producing counties in Colorado.

#### Childhood agricultural activities & memories

The socialization process continues throughout the life course of the individuals, but is especially prominent in youth and novices (Chapin et al 2018). Examining socialization to agriculture in youth is therefore relevant to discovering the value-building process of individuals involved in agriculture. The overwhelming majority of participants (80%) said their first memory directly related to agriculture took place under 8 years old. 10% said their first agriculture memory took place between 8-11 years old. Ages 12-17 years old and 18-21 years old for their first agricultural memories each had 5% of participants. The specific circumstances of participants' first agricultural memory was varied but in general, only 38% of participants' first agriculture memory was related to growing up on a farm or ranch, and 63% were related to other agricultural exposures. Specific circumstances are reported in Figure 1 below.

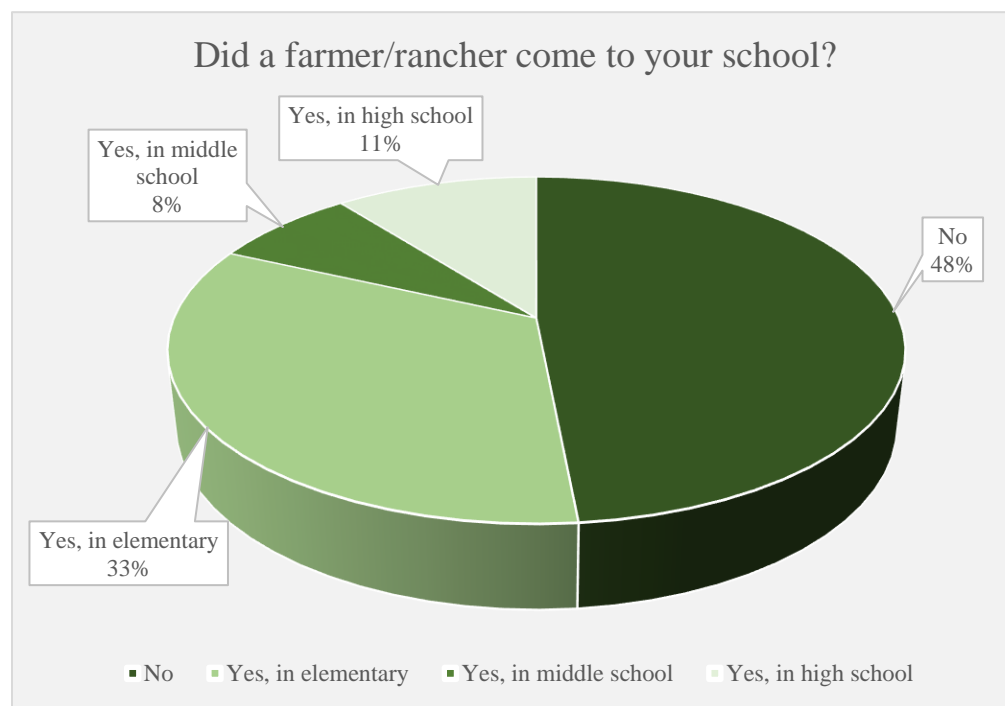


**Figure 1.** Shows the proportion of participants' first agricultural memories into the pre-selected categories of the survey (n=58).

Participants were asked if they remember a farmer or rancher ever coming to their school. Figure 2 below shows the breakdown of if and when a farmer/rancher visited participants' schools. Note that participants were able to enter more than one answer to account for separate experiences in elementary school, middle school and high school.

55% of participants said that they did not remember a farmer or rancher ever coming to their school. 37% of participants said that they did remember a farmer or rancher coming to their school in elementary school. 12% said one came in high school and just 8% said one came in middle school. The interaction of field and habitus

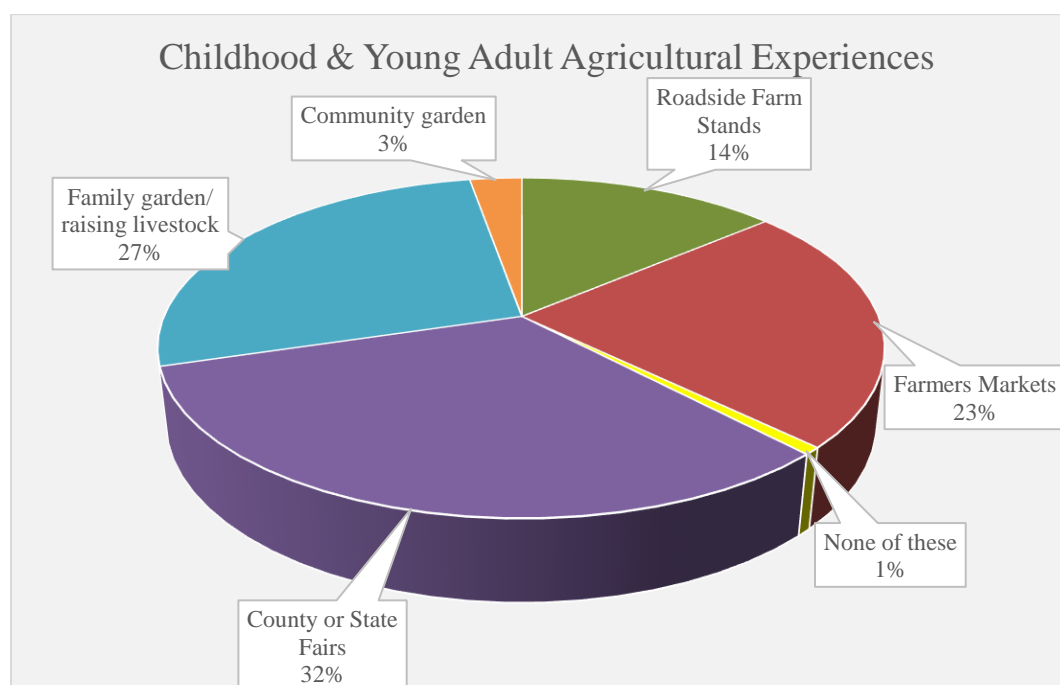
contributes to the practices an individual or society engage in- like the practice of an agricultural career. Field consists largely of relationships- both social and spatial. Having the opportunity to develop a relationship, even fleetingly, with a farmer could therefore be an important step that is missing from the agricultural socialization process of young people.



**Figure 2.** Illustrates all survey participants' answers to the question about whether a farmer or rancher ever came to their school, and if so, in what grades.

Participants were asked to identify any childhood agricultural experiences they had experienced from a list of choices. These choices included farm stands, farmers

markets, county or state fairs, family gardens/livestock raising, and community gardens. 98% of all participants selected at least one experience, many selected more than one. These are summed up in Figure 3 below. County or state fairs, farmers markets and familial agricultural activities were all very common experiences shared by survey participants. The effect these childhood experiences had on participants' aspirations to enter agriculture is explored below.



**Figure 3.** Sums up the types of childhood and young adult experiences that participants had. Note that participants could select all of the options that they experienced (n=59).

#### Effects of childhood experiences on desire to enter

Survey participants were asked if they felt their childhood experiences contributed to their desire to enter agriculture. An overwhelming majority (88%) of participants said

yes, they did feel their childhood experiences contributed to their aspirations to enter agriculture. Just 12% said they did not feel their childhood experiences contributed to their desire to enter agriculture. Precisely which childhood experiences participants' thought contributed to their aspirations was not explored for this study but would be an interesting question for future work. Participants were invited to elaborate on how they felt their childhood experiences contributed to their aspirations to enter agriculture in an open-ended question. Answers were coded for themes using open coding.

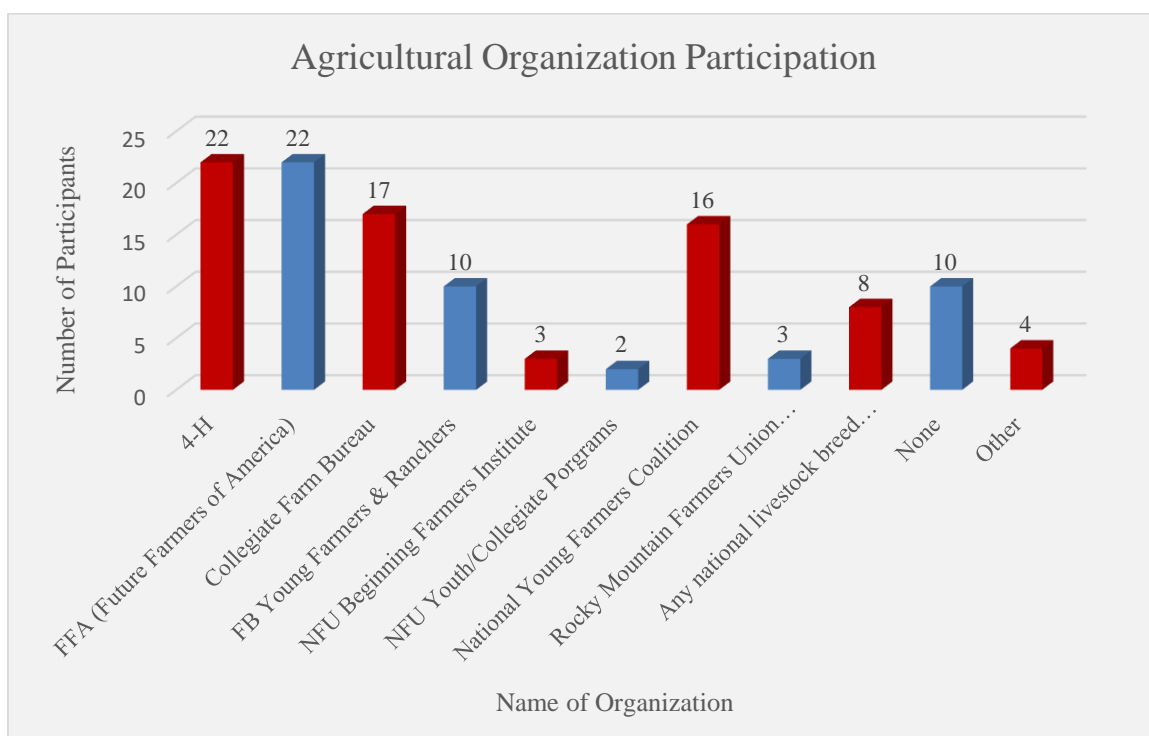
Participants who elaborated in the open-ended question had various ways that they believed their childhood experiences influenced their agricultural career goals including the sense of family heritage that was instilled in them, loving the farming environment they grew up in, gaining an enjoyment of being outside, and instilling the love of hard work that benefits others. Interestingly, deviating from the majority, one participant stated that there was a significant lack of agriculture in their childhood and they believe their entry into farming is a reaction to this, out of a "desire to reconnect with an agrarian ideal." Another stated a similar sentiment that they did not experience agriculture as a child and were exposed to farmers markets and community gardens as a young adult. They maintain that the lack of exposure as a child is what drew them to agriculture as an adult.

These findings indicate that agricultural career interest can result from agricultural socialization during individuals' childhoods. Also worth noting is a possible recurring theme of a lack of exposure in youth followed by later exposure to agriculture motivating

some individuals toward an agricultural career. Future work examining this narrative more closely with these participants and/or in larger sample sizes could yield interesting results concerning more specific socialization processes, larger fields and more indirect socialization processes. The possible effects of agricultural exposure will be discussed further and in relation to interview data in the Discussion section.

#### Young adult agricultural experiences and activities

The socialization process can occur through interactions that are a part of rituals, structured institutional involvement or informal, everyday activities (Chapin et al 2018). With that in mind and having investigated informal activities such as farmers markets or indirect agricultural exposure, I examined more structured, institutional agricultural involvement. Participants were asked to indicate if they had participated in any of a variety of agricultural young adult organizations. These organizations span high school and college ages, as well as the young farmer/rancher age range of 18-35 years old. Participants could select as many of the groups as they had participated in and many did select more than one. Figure 6 shows how many participants (out of the 58 participants who answered the question) participated in each organization. How participation in these organizations may have impacted participants' aspirations for an agricultural career is examined in the following subsection.



**Figure 4.** Illustrates the agricultural youth and young adult organization that participants reported being involved in. Abbreviations were needed to assist in fitting in the organization titles to the Figure. From left to right the full titles of the organizations are as follows: 4-H, Future Farmers of America (FFA), Collegiate Farm Bureau, Farm Bureau Young Farmer & Rancher program (FB Young Farmers & Ranchers), National Farmers Union Beginning Farmers Institute (NFU Beginning Farmers Institute), National Farmers Union Youth/Collegiate Programs (NFU Youth/Collegiate Programs), National Young Farmers Coalition, Rocky Mountain Farmers Union Fellows Program, Any National Livestock Association's Youth Program, None and Other. (n=58 participants).

#### Effects of young adult experiences on aspirations to enter

65% of survey participants said they felt that their high school experiences contributed to their aspirations to enter agriculture with the remaining 35% saying they did not think their experiences in high school contributed. Participants were given the option to elaborate on how they thought their experiences in high school contributed to

their desire to enter agriculture in an open-ended question. After open coding, many responses expressed that FFA and 4-H activities in high school strongly encouraged and influenced them towards agriculture through expanding their knowledge and notably, legitimizing agriculture as a career option. Others stated their first jobs in high school were agriculture related.

About half (48%) of participants seriously considered a career in high school. 20% said they thought about it but never seriously, and 31% said they never considered it as a career path in high school. When asked at what age they seriously considered a career in agriculture, 47% said under 18 years old. 33% said they considered agriculture seriously between 18 and 21 years old. 19% said it was not until they were 22 to 30 years old, and 1% of participants said they were over 30 before they seriously considered a career in agriculture. Altogether, the slim majority of participants (53%) did not consider agriculture as a serious career option until after the age of 18 years old. When you consider many participants did not seriously consider an agriculture career in high school, this indicates several possible conclusions. One possible conclusion, since nearly all participants stated they didn't remember a farmer/rancher coming to their high school or knowing any farmers/ranchers during that age, this indicates the possibility that a lack of exposure during high school ages is extremely detrimental to agricultural career interest. Those who did consider agriculture as a career in high school nearly always either knew farmers/ranchers or had access to programs aimed at agriculture career building, such as FFA (Future Farmers of America) or 4-H. Another possible conclusion is that if many



young agriculturalists are not considering agriculture as a career when they are under 18 years old, then expanded support or exposure for agriculture targeted toward those over 18 years old may be needed. These findings will be discussed in conjunction with interview findings in the discussion section. Further work exploring these themes and the relationship between age and consideration of agriculture as a career coupled with elements of agricultural socialization is needed to make more definitive conclusions.

### Personality factors

#### Self-identified personality traits

Participants were asked about their perceived personality traits, to see if any possible relationships exist between their own identification of personality traits and aspirations for an agricultural career. This was done by asking participants to rate their feelings toward various statements about their personality traits. Table 6 summarizes the results of the rating.

**Table 4.** Shows how many participants responded with which sentiments to a variety of questions about their self-perceived personality traits (n=53).

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
<b>I enjoy working alone.</b>	3	6	11	18	15
<b>I enjoy working with people different than me.</b>	3	3	7	30	10

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
<b>I am comfortable taking risks.</b>	1	3	7	23	19
<b>I enjoy working with people similar to me.</b>	0	1	7	32	13
<b>I enjoy flexibility and variety in daily job duties.</b>	1	0	2	19	31
<b>I handle uncertainty well.</b>	0	5	15	23	10
<b>I feel successful at time management and task prioritization.</b>	1	2	4	27	19
<b>I am comfortable making decisions.</b>	0	2	4	24	23

Of note, 44% of participants said they “somewhat agree” that they are comfortable taking risks (and 35% said they “strongly agree”). 58% said they “strongly agree” that they enjoy flexibility and variety in daily job duties (35% said they “somewhat agree”). 50% said they “somewhat agree” that they feel successful at task management and time prioritization (35% said they “strongly agree”). 45% said they “somewhat agree” that they are comfortable making decisions (43% said they “strongly agree”). Additionally, 43% said they “somewhat agree” that they handle uncertainty well, 18% said they “strongly agree” and 28% said they were “neutral”. This indicates that

many participants do share some general perceived personality traits but no definite relationships or correlations can be drawn from this sample size. To what degree these personality traits influence individual values and value-building around a career in agriculture is not yet known but would be a good space for future work to explore. Future work could also examine these personality traits more successfully within a larger sample size. Possible impacts of perceived personality traits on agricultural career aspirations are explored in later sections in conjunction with interview findings.

#### Reported motivations for agricultural entry

Participants were asked to rate how much they agreed or disagreed with various statements about why they wanted a career in agriculture. They were able to rate each statement independent of what they had rated the other statements (no ranking system) so it was possible for participants to indicate if they felt strongly about multiple statements (or did not feel strongly about any). These statements reflect where individuals' place value in various aspects of their agricultural career aspirations.

When asked how they felt about the statement "I wanted a career in agriculture for the lifestyle it comes with" 62% of participants said they strongly agreed. 22% said they somewhat agreed. Those who selected one of the following: "Strongly Disagree", "Somewhat Disagree" and "Neutral" made up 15% of participants. This indicates a strong attraction toward perceived lifestyle when contemplating an agricultural career. This research did not seek to define what the agricultural lifestyle that participants wanted was and thus, survey participants were not asked what the agricultural lifestyle

was for them. Given that this was a significant factor to survey participants, interview participants were asked to elaborate on why they aspired to a career in agriculture for the lifestyle, and some offered definitions of the agricultural lifestyle in this process. This is discussed in later sections. Further research should explore how individuals pursuing a career in agriculture or involved in agriculture define what the “lifestyle” that agriculture comes with is. It appears that the perceived lifestyle that comes with agriculture is very valued by the majority of study participants.

The next statement was “I wanted a career in agriculture because of the culture surrounding it.” Again, most participants (56%) said they strongly agreed with the statement. The next largest selection at 32% was “Somewhat Agree”. No participant selected “Strongly Disagree”, only 3% selected “Somewhat Disagree” and 7% were “Neutral”. Finding the definition of what participants considered the “culture of agriculture” was not the focus of this study and so it was not investigated but it would be interesting to examine in future research.

The statement “I wanted a career in agriculture so I could be self-employed” was met with more diverse reactions, with no strong majority. “Strongly Agree” and “Somewhat Agree” each had 33% of responses, “Neutral” had 22%, “Somewhat Disagree” had 3% and “Strongly Disagree” had 5%. “I wanted a career in agriculture so I could work outside” had more distinctive results with 58% stating they “Strongly Agree”, 33% saying they “Somewhat Agree”, 5% selecting “Neutral” and 2% selecting “Somewhat Disagree”. There were no “Strongly Disagree” responses.

Participants were also asked how they felt about the following statement “I wanted/want a career in agriculture so I could/can make enough money to live comfortably”. The results were much more varied. With a slight majority, “Neutral” had 31% of responses. The next largest share of responses was “Somewhat Agree” at 25%. Then, “Strongly Disagree” at 16%, “Somewhat Disagree” at 14%, and finally “Strongly Agree” had the smallest share of answers at 12%. This indicates that financial stability is likely not a prime motivator in aspiring to enter agriculture for young agriculturalists, but that feelings toward this statement do vary quite a bit among participants. This makes the development of aspirations to farm or ranch an even more interesting cultural question and positions anthropology as a prime avenue to investigate this.

Participants were asked if they viewed agriculture more as a career, or a lifestyle. The majority identified it as equally a career and a lifestyle (64%). Of the remaining answers, 32% said they view it more as a lifestyle. Just 3% said they view it more as a career. No definitions of lifestyle or career were explored in this study.

Participants were asked to state if they considered various factors when aspiring to an agricultural career and how important those factors were to them. Table 5 summarizes the responses to these questions. Participants did not have to rank the various factors and instead indicated to what degree that factor played a role in their desiring a career in agriculture. These questions also indicate what aspects of an agricultural career hold value for the individuals studied. The following answer options were available to participants to choose from: “Not a Factor”, “Very Unimportant”, “Somewhat

Unimportant”, “Neutral”, “Somewhat Important”, and “Very Important”. Table 7.

Summary of participant responses to if they considered a variety of factors when desiring a career in agriculture (n=52).

**Table 5.** Illustrates participants responses to whether or not they considered a career in agriculture for a variety of reasons (n=52).

<b>Statement</b>	<b>Not a factor</b>	<b>Very Unimportant</b>	<b>Somewhat Unimportant</b>	<b>Neutral</b>	<b>Somewhat Important</b>	<b>Very Important</b>
<b>“The lifestyle and culture it offers”</b>	0	1	1	2	19	29
<b>“To make a lot of money”</b>	18	9	7	6	12	1
<b>“It is what my parents do/did”</b>	24	0	4	4	15	5
<b>“Everyone else around me was doing it.”</b>	22	3	3	6	18	1
<b>“Since I was young I always wanted to be a farmer or rancher.”</b>	16	1	2	7	20	7
<b>“I did not like the way I saw farming being done and wanted to change it”</b>	21	2	3	10	9	8
<b>“I wanted to continue the agricultural legacy into the future.”</b>	7	1	1	4	16	24

Statement	Not a factor	Very Unimportant	Somewhat Unimportant	Neutral	Somewhat Important	Very Important
<b>“I wanted to grow my own food”</b>	6	1	0	11	19	16

These questions were chosen to represent a variety of both personal/internal factors and economic/social (external) factors. The questions that are designed to investigate the value placed on internal/personal factors were as follows: “How important was the factor ‘the lifestyle and culture it offers’ in making you want a career in agriculture?”; “How important was the factor ‘since I was young I have always wanted to be a farmer or rancher’ in making you want a career in agriculture?”; “How important was the factor ‘I wanted to continue the agricultural legacy into the future’ in making you want a career in agriculture?”; “How important was the factor ‘I wanted to grow my own food’ in making you want a career in agriculture?”; “How important was the factor ‘I wanted to contribute to feeding the growing number of people on the planet’ in making you want a career in agriculture?”

The following questions explored more external social/economic factors: “How important was the factor ‘I did not like the way I saw farming being done and wanted to change it’ in making you want a career in agriculture?”; “How important was the factor ‘it is what my parents do/did’ in making you want a career in agriculture?”; “How important was the factor ‘everyone else around me was doing it’ in making you want a



career in agriculture?"; "How important was the factor 'to make a lot of money' in making you want a career in agriculture?".

Interestingly, the most common answer for each of the economic/social support factor questions was "Not a factor" indicating that many of these factors are not valuable to young people when considering if they want a career in agriculture. The most common answer for the personal factors questions was more varied, but all of the most numerous responses were either "very important" or "somewhat important" as illustrated in the previous figures. This indicates that overall, survey participants stated that internal/personal factors are valued as highly important in aspirations for a career in agriculture and that strictly external/economic factors are valued less so.

In their own words: Why they wanted to enter agriculture.

Survey participants were asked, summed up in their own words, why did they enter agriculture? Since this was an open-ended question, these answers were open-coded for recurring themes. 48 participants gave answers. Some individuals mentioned several reasons why they entered agriculture, and so for each portion of their answer that fell into a thematic category, a tally was added to that thematic category, resulting in more occurrences of thematic elements than the number of individual responses to this question. There were four main themes that summed up why participants desired to enter agriculture. The four main themes are shown in Table 6.

**Table 6.** Lists the four main themes identified in the participants' answers to the open-ended question "Summed up in your own words, why did you enter agriculture?" (n=48).

Theme 1	Family Heritage/Tradition/Pride
Theme 2	The Lifestyle
Theme 3	Enjoyed farming/ranching/working on land or with livestock.
Theme 4	A way to contribute to, give to, care for, or impact their community.

Each one of these themes had 9 responses. These responses each had a specific word or phrase in them that placed them in the theme. To be placed in Theme 1, a participant had to use one of the words listed in the theme description in Table 6. To be placed in Theme 2, the response had to mention "lifestyle" specifically. To be placed in Theme 3, the response had to express enjoyment for the work. To be placed in Theme 4, the response had to directly mention "community".

There were a good number of other common themes, though none as numerous as the four primary themes listed above. There were six responses each for the two following themes:

"I fell in love with it (agriculture)."

"It (agriculture) felt fulfilling."

It was interesting that numerous participants used the actual term "love" when describing how they felt about agriculture, farming or ranching.

The six participants included in the “It felt fulfilling” theme indicated they found agriculture to be very fulfilling, or that they entered agriculture because they were looking for something to do that felt more fulfilling than what they had been doing.

There were minor themes identified from very similar responses among several survey participants. These minor themes of why individuals aspired to a career in agriculture are listed below with the number of responses for each one in parentheses.

“I grew up around it” (5)

“To Feel connected to the land” (4)

“To pass something onto future generations” (3)

“Agriculture is my passion” (3)

“To steward the land” (3)

“I like being my own boss” (3)

“To grow my own food” (2)

#### Perceptions of social support for agriculture & agricultural careers.

Participants were asked to rate how much they agree or disagree with several statements about community and social support for agriculture in general and for their own agricultural endeavors. The following table 7 sums up the responses to the statements.

Table 7. Summary of participants responses to question about social support (n=55).

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
<b>“I feel like my community supports my agricultural activities”</b>	0	4	12	21	18
<b>“I feel like there are members of my community who I can connect with about my agricultural activities.”</b>	2	2	3	17	31
<b>“I feel like there are support systems I can utilize in my community including friends, family and community members.”</b>	1	2	7	14	31
<b>“I feel like the general public (across the U.S as a whole) supports the kinds of agricultural activities I engage in.”</b>	8	16	19	9	3

As the previous figure indicates, most agriculturalists surveyed felt supported by their communities, and able to connect with support systems within their communities. However, results were more ambiguous when participants were asked “I feel like the general public (across the US as a whole) supports the kinds of agricultural activities I engage in.” 34% said they were neutral, 29% said they “somewhat disagree”, 16% said they “somewhat agree”, 14% said they “strongly disagree” and 5% said they strongly agree. This illustrates a wider variety of opinions among participants about nationwide support for their agricultural activities than with other questions about social

support. This is especially interesting when compared with answers about how participants felt about their community supporting their agricultural activities. Survey participants did agree that they felt their community supported their agricultural activities but were split between “somewhat agree” and “strongly agree” at 38% and 32% respectively. 21% said they were neutral and just 7% said they “somewhat disagree”. It appears as though young agriculturalists felt supported by their communities but less supported on a more nation-wide level. Future studies with a larger sample size spread across the country could yield more insight into this possible phenomenon and its potential implications on aspirations for an agricultural career.

Participants were then asked if the public’s attitude toward agriculture played a role in their decision to enter agriculture. The purpose of this question was to determine whether social attitudes toward agriculture plays a role in people’s desire to enter agriculture, regardless of what the participant interpreted those specific attitudes to be. This researcher acknowledges that this is a very broad question and could encompass many possible interpretations of “public attitudes toward agriculture” including public opinion of agriculture as a career choice, or public opinion surrounding types of agriculture or specific agricultural practices individuals engage in. Further research could examine in more depth how various public attitudes play a role (or don’t) in an individual’s agricultural entry. 45% of participants said that they did not consider the public’s opinion toward agriculture and that it played no role whatsoever in their decision to enter agriculture. For 29% of respondents, when asked if they considered public

opinion, said they did and it was a positive motivator toward an agricultural career. Only 1 participant stated they considered public attitude toward agriculture and it deterred them from an agriculture career to some degree. 23% said they thought about public attitudes toward agriculture, but it did not ultimately affect their decision.

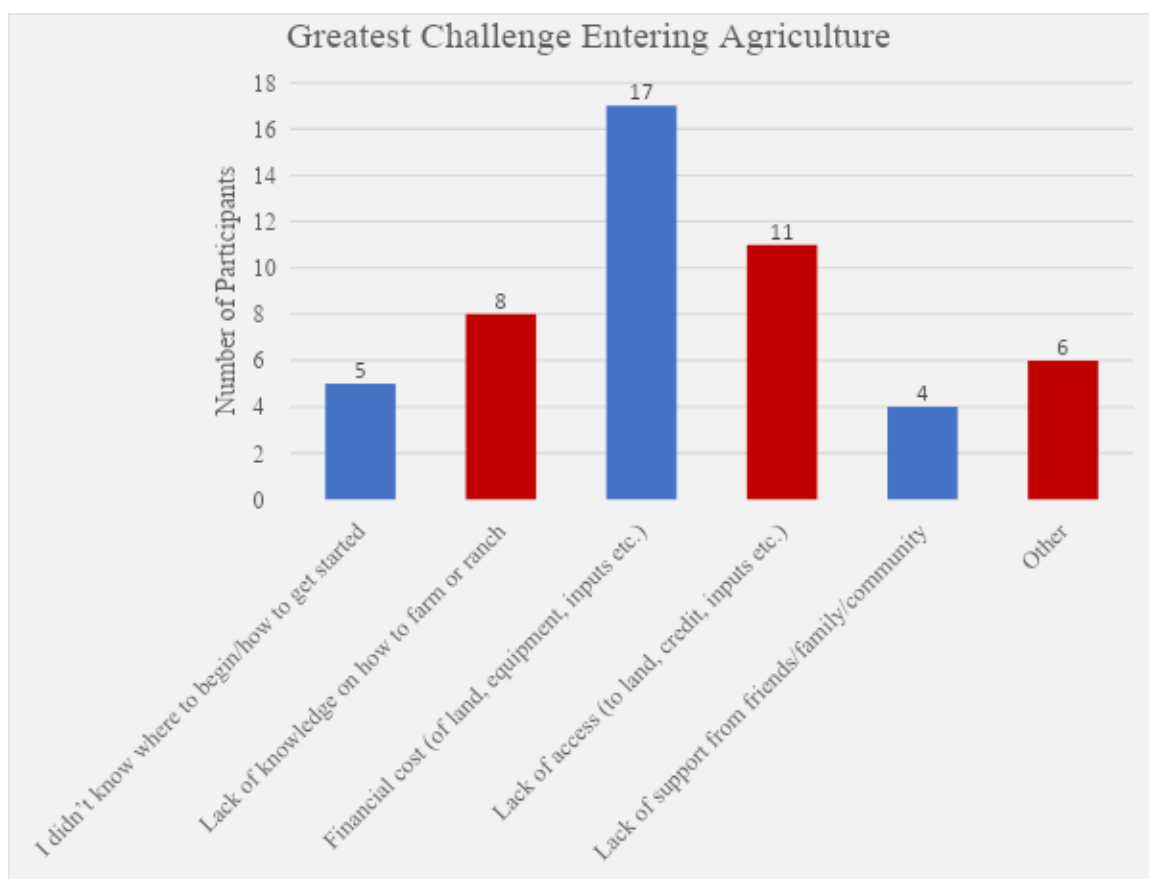
These perceptions of social support were examined through the lens of field: ie the relationships that exist between and around individuals relating to agriculture and how those relationships impacted those aspiring to be involved in agriculture. It appears that for the most part, the public's opinion did not play a (conscious) role in individuals' agricultural aspirations, however, for some respondents, it was a positive motivator toward an agricultural career. In only one case was public opinion a deterrent from a career in agriculture.

#### Issues previously identified in the literature:

The literature review identified several challenges facing young farmers and ranchers, many of which focused on economic issues. For comparative purposes, the survey asked participants their thoughts and experiences on some of these previously identified issues. Participants were asked to identify what their greatest challenges and supports were when entering (or for those still aspiring for entry, what they anticipated their greatest challenges/supports would be) as well as how other topics such as student debt, burnout and off-farm labor impacted them.

### Overall greatest challenges

Participants were asked to select their greatest challenge when entering agriculture from a list of options (or anticipated greatest challenge for those still aspiring for agriculture career entry). The most cited challenge to getting started in agriculture was financial cost, 33% of respondents selected that option. 22% of respondents said that lack of access to land, credit, inputs etc. was their greatest challenge. 20% said that lack of knowledge on how to farm or ranch was their greatest challenge. Just 9% said they did not know where to begin or how to get started, 7% responded to each “Lack of support from family/friends/community” and “other”. Those who selected “other” were able to write in their challenges and those answers included not being able to make a living wage in agriculture and limited access to health insurance while farming.



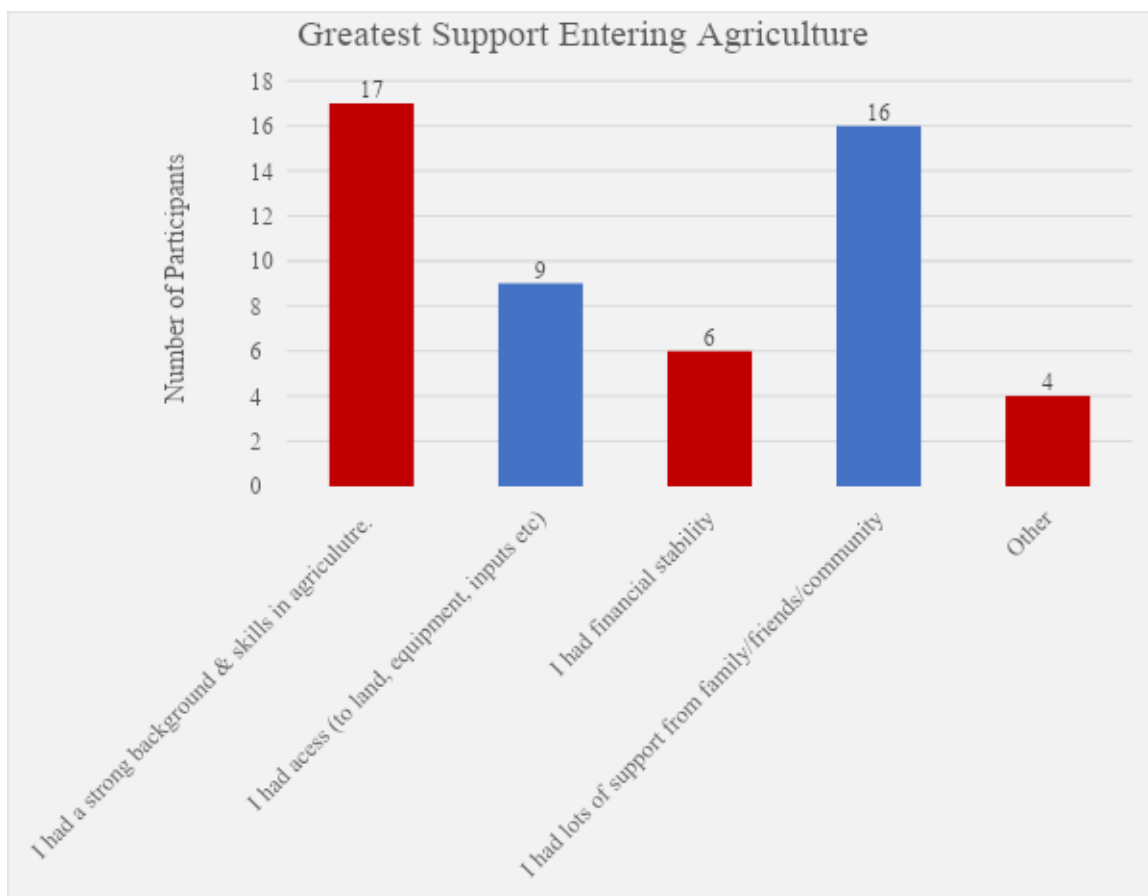
**Figure 5.** Illustrates what participants said was, or will be, their greatest challenge when entering agriculture. (n=51).

### Supports when entering

Participants were also asked to identify their greatest support when entering agriculture from a list of pre-selected options. The data yielded two front-runner options, with one in slight majority over the other. “I had a strong background and skills in agriculture” was identified by 32% of participants as their greatest support when getting started in agriculture. 30% said their greatest support was “I had lots of support from



family/friends/community.” 17% of participants said their greatest support was “I had access (to land, equipment, inputs etc)”. 11% answered their greatest support was “I had financial stability” and 7% selected “other”.



**Figure 6.** Illustrates what participants identified as their greatest support was, or greatest anticipated support will be, when entering agriculture (n=52).

### Burnout during entry

Survey participants were asked if they ever experienced burnout in their agricultural entry process or agricultural career, but they were not asked if or how this

impacted their aspirations for a career in agriculture. 57% said they did experience burn out in their agricultural entry process or agricultural career. 43% said they did not experience burnout. They were given the option to explain their experiences with burn out in their own words and 50% of survey participants who suffered from burnout did so. Many of the participants' responses focused on burnout in their agricultural career in general, but some detailed burnout when getting started, specifically. In the open-ended responses, burnout was explained from factors such as struggling to cover living expenses and student debt, constant denial in trying to lease land, the overwhelming number of multi-faceted skills needed and the small relative margin to make finances pencil out year after year.

#### Student debt

When asked if they had student debt, or had in the past, 51% of respondents said they never had any student debt. 17% said they did not currently have student debt but had in the past. 30% currently had student debt. Participants were then asked what role student debt played in their entry into agriculture. Of the 49% of all participants who either currently have, or have had, student debt, 40% said student loan debt had no effect on their entry into agriculture. 60% said it made their entry into agriculture harder, and no participants said it made their entry into agriculture easier. Participants weren't asked if student loan debt played any role in their aspirations for an agricultural career.

### Occupation and off-farm labor

Participants who were currently engaged in agriculture (Track 1, n= 51) were asked to identify their current occupation/role within agriculture. The choices were: Production Agriculture Owner/Operator, Production Agriculture Worker, Agribusiness Owner/Worker, Non-Agriculture Sector, Not Currently Working or Other. In total, 35% (17) of track 1 survey participants identified more than one occupation, while 65% (32) identified only one occupation. It is interesting that over twice as many participants had only one occupation as had multiple occupations. This indicates that off-farm jobs possibly are not incredibly important to those young people who have already entered agriculture, although this is not consistent with previous findings (Ackoff et al 2017, Alasia et al 2009, Ahearn & Newton 2009). Previous findings have often indicated off-farm jobs being necessary for young agriculturalists to financially make ends meet. There are a couple possible explanations for this inconsistency in this research. The first is, this sample size is very small and thus is not fully representative when it comes to this issue. The other is that young agriculturalists in Colorado truly are not participating in off-farm jobs to the same degree as their counterparts in other parts of the country. Future research should examine if there is merit to this possibility and if so, investigate what conditions are present to make Colorado young agriculturalists participate less in off-farm jobs.

Particularly interesting is the frequency in which participants with more than one occupation participated in another agricultural occupation, instead of a non-agricultural sector occupation. Participants with multiple occupations were 3 times more likely to

report multiple agricultural occupations than to report an agricultural occupation combined with a non-agricultural sector occupation. Previously examined literature indicates young and beginning farmers frequently have off-farm jobs, although those studies do not describe what these “off-farm” jobs consist of (Alasia et al 2009). Therefore, it is hard to compare how this study’s findings match up with previously conducted studies as it is unclear if the other studies’ “off-farm” jobs are non-agricultural jobs, or simply agricultural sector jobs that do not take place on the individual’s own farm. Without that knowledge, it cannot be stated whether this study’s sample population is, for some reason, different from other populations of young agriculturalists or if this study’s finding is consistent with other findings. Further work should be done to determine how widespread this occurrence of multiple occupations all within the agriculture sector is.

Also of interest, 62% of track 1 survey participants said that agricultural work accounted for 50% or more of their annual income. 33% stated that they did not receive 50% or more of their income from agricultural work, and 3% were unsure if they received 50% or more of their income from agricultural activities. In the literature, young agriculturalists aren’t often distinguished from “beginning” farmers and ranchers, so it is hard to find a direct comparison. One article did find that off-farm income accounted for 83% of annual farm household income in 2011 amongst all farmers, established and beginning- and that beginning farmers were found to have comparatively less farm income and more off-farm income than established farmers (Ahearn 2013). It is therefore

interesting that this study had so many participants in which agricultural work accounted for 50% or more of their annual income. Further work with a larger population size should investigate this possible anomaly among Colorado's young farmers and ranchers.

When asked about if they or their spouse engaged in off-farm labor, 71% of Track 1 participants reported yes, they did. This high number may seem at odds with the reported number of non-agriculture sector occupations previously discussed. However, this question asked specifically about the participant or their spouse; the previous occupation question was directed only to the participant. Additionally, the previous question asked specifically about agricultural and non-agricultural occupations; this question asked about "off-farm" labor without specifying what sector "off-farm" labor took place in. This inconsistent wording was an oversight of the researcher.

These results could indicate two possible conclusions. The first being that it could indicate many off-farm income sources are income sources from the agricultural sector and do not consist of non-agricultural sector jobs. Off-farm labor could be interpreted by participants as any work or job taking place not on the chief operation (or "farm") of the participant, but still including work on another agricultural operation. This conclusion could be supported by the combination of these two data sets but requires future inquiry to conclude definitively. The other possible explanation could be that when considered on the house-hold level, farm households have a high incidence of off-farm labor (either in the agriculture sector, or outside of the agricultural sector), while the specific individual

engaged in agriculture may have a lower incidence of off-farm labor than the household does.

As for why individuals or their spouses were engaging in off-farm labor, 56% of those reporting they or their spouse engaged in off-farm labor said off farm labor was necessary to meet their financial obligations. 20% said they engaged in it because they enjoyed the extra income and 23% said it was personally fulfilling.

#### Land ownership and employment status

56% of Track 1 participants (those currently involved in agriculture) identified as production agriculture owner/operators and not strictly production agriculture workers. Given that land access is a major area of concern in the literature, it is useful to consider how Colorado's young farmers and ranchers who are owners/operators access production assets. There was a variety of ways those owner/operators obtained their land to operate on. 41% both rent and own the land they operate on, 38% of operators rent all their land and 14% of operators own all the land they operate on. 7% neither rent nor own land: one had a business partnership with his father in which no lease is owed, and the other is currently looking for land to operate their production agriculture operation on.

As for how those who own land procured it, the results present findings aligning with recent previous research that farmland is largely not inherited (Ackoff et al 2017). More young farmers and ranchers bought their land than those who inherited it- 42% of respondents who reported owning land inherited it, compared to 58% who purchased it. Broken down into further categories of the 58% who bought land: 26% bought it on the

open market, 22% bought it from a family member, and 10% bought land as part of a partnership, LLC, Corporation or another business entity they are a part of.

Another important aspect to consider for entry is if participants were employed by farms/ranches other than their own when getting started in production agriculture. Of those who now owned/operated their own farm or ranch, 37% worked for another operation when getting started in agriculture. 41% reported never having worked for another farm/ranch when getting started, and 20% reported that they still work for another operation while running their own as well. This indicates that utilizing other established operations for employment opportunities or experience may or may not necessarily be a typical prerequisite for successfully entering agriculture, at least in this region. Future work should examine the impact of agricultural employment opportunities on aspirations for and actualized entry into agriculture.

### Interview Data

Utilizing recruitment methods outlined in the Methods section above, virtual interviews with 13 of the survey participants were arranged. The open-coding process described in the Methods section was used for the interview data and yielded several themes and subthemes. Themes were established because of the frequency with which a majority of participants expressed the theme and indicated it was of great importance to them. Sub-themes were themes either indicated by several participants as being very important or were themes which were expressed by a majority of participants but were

indicated to be less important than the main themes. There were also several topics revealed in the interview process that yielded interesting results regarding why participants are involved in agriculture and what factors contributed to their involvement. These individual themes and topics will be discussed in sub-sections below.

Themes identified from interview data:

- Exposure to agriculture in a career context is important
- Personal factors heavily motivate aspirations for agricultural career
- Risk and risk-tolerance is a major topic
- Lifestyle Decision more so than a career choice

Sub-themes:

- Agricultural aspirations are internalized
- Conscious choice to pursue agriculture
- Seeking alternative modes to entry

Final paragraphs in this section discuss why participants think there are not many young agriculturalists (in their own words) and the reasons participants give for why they are involved in agriculture.

#### Exposure to agriculture in a career context.

The most frequently identified theme throughout the interviews was exposure to agriculture within a career context. 77% of interview participants mentioned their



exposure to agriculture in a career context as an important moment in shaping their aspirations for an agricultural career. The point at which participants were exposed to agriculture in a career context was the point at which they stated they became interested in an agricultural career. This happened at different points in life for all participants. Participants shared that once they saw agriculture being done as a legitimate career, they became able to see themselves pursuing it as a career, and thus, their aspirations for an agricultural career began. One participant described their first 4-H experience as a big part of why they wanted to enter agriculture. Through the 4-H program, they raised an animal all summer, and then were able to sell it at the 4-H fair at the end of the summer. This process allowed them to make money doing something they found highly enjoyable, and thus, prompted their plan of being involved in an agricultural career. Another participant stated that while they went to pumpkin patches and apple orchards as a kid, agriculture as a job never clicked for them at that stage. They did not actually know any farmers until later in their life. And they did not consider actually being involved in an agricultural career themselves until they had several successful summer jobs working on a farm in college. For another participant who grew up in a community where there were many avid gardeners who grew household vegetables, being able to farm as a way to make money was a concept that did not occur to them until they were exposed to for-profit farms. After college they began to see a need for local food production and examples of ways to make a profit while farming became visible to them and thus prompted their agricultural career aspirations. There were many other ways in which participants were exposed to agriculture in a career context including having childhood

friends who grew up on farms or ranches, college jobs, post-graduate projects, investigating where their food comes from, growing up on a farm or ranch and pursuing relief from health issues.

This theme highlights the importance of both socialization and Bourdieu's concept of field (the network of relationships and social grouping which individuals are located in). Individuals require socialization to agricultural careers in order to consider that career. Additionally, the networks that they are exposed to are important to developing their aspirations for an agricultural career as they must see a path forward into this career.

#### Self-declared personal factors heavily motivate agricultural aspirations

Another theme identified was participants' self-declared motivations for aspiring toward a career in agriculture- all participants were asked what type of factors were the most driving in their aspirations to be involved in agriculture: economic/external factors, personal/internal factors, or some combination of the two. 92% of interview participants said that personal/internal factors were the most driving factor to them in aspiring for an agricultural career. However, it was frequently stated that economic factors and challenges impacted if agricultural entry was feasible for the participant. But, participants noted, those economic/external factors didn't impact their aspiration for an agricultural career. There was a variety of ways in which the relationship between personal factors and economic ones were expressed but many participants indicated that they aspired to enter agriculture for personal reasons, but economic factors were important for actually

getting involved or staying involved in agriculture. For example, many said that while they entered agriculture for personal reasons, staying in agriculture required economical justification and deep consideration of the economic realities when making decisions. Additionally, while participants did not consciously feel like economic/external factors influenced their aspirations, given the concepts of socialization, social reproduction, and habitus discussed throughout this study, external factors do influence the internalized values and perspective of the individual to some degree.

Participants stated that personal factors heavily motivated agricultural aspirations which indicates value in an agricultural career exists for the individual outside the sphere of strictly economic/financial considerations and that socialization processes are important in developing such aspirations. Personal factors include the various environments, experiences and socialization processes that each individual has encountered throughout their life, resulting in the development of a Bourdieuan distinction where the individual develops an identity within and preference for involvement in an agricultural career. This distinction results in individuals holding value in their agricultural involvement that is not easily dissuaded or impacted by more external factors and forces. Through individual's unique experiences, they come to find value within an agricultural career and this sense of value is a central part of the individual's habitus- as well as the shared habitus of the young agricultural community. This habitus places emphasis on the non-quantifiable benefits of working in agriculture which vary for

individuals but generally could include connections to the land, flexibility, a sense of community, and filling the role of a provider, for not only their family, but also for the greater community.

### Risk and risk-tolerance is a major topic

Risk associated with agriculture was discussed and acknowledged by all participants as an expected part of the industry. All participants said that some degree of risk was involved in the industry, largely due to the complexity of agriculture. According to participants, agriculture has high levels of risk due to agricultural products of all classes being at the mercy of weather events, pests and disease, uncertainty within local markets and demand, uncontrollable macro-level economic impacts on consumers, and there's often risks associated with legislation, policy, trade and public perception. It is important to note that the risk being discussed by participants was financial/fiscal and business risk, not bodily risk. An example of the relationship between individuals and risk is illustrated in the following quote:

“My dad and my grandpa had got me and (brother) started. We each got given cows and then we had to have two (calf) crops born to pay for the cow but then we got to start making decisions.... I kind of floated into it at first. But I took a little risk this last year finally and I bought some more cows.... At first I wasn't as comfortable in the risk taking. And as you start running your own operation, you kind of realize there are certain risks that you have to take and after a while you kind of get a little more comfortable with taking risks... But, if you are smart enough about keeping your operation afloat, you always just have in the back of

your mind there are risks that aren't too risky and in order to keep your operation above ground, they are necessary.”

61% of interview participants determined there to be an “higher” level of risk tolerance (and in some cases, risk taking) inherent among agriculturalists (no attempt was made by the researcher to quantify what “higher” risk tolerance is). This could indicate that risk tolerance, or a higher threshold of risk-taking is part of the shared habitus of young agriculturalists. Additionally, risk taking or at least risk tolerance is likely part of the distinction that agriculturalists build into their chosen profession- one of the things that sets this profession, and the people in it, apart from other career choices.

#### Lifestyle decision over career choice

When asked if they thought their aspirations for agricultural involvement stemmed from more of a career choice or a lifestyle choice, 53% of participants stated it was primarily a lifestyle choice. 30% said that it was some “combination of lifestyle and career”. Interview participants differed wildly on what they defined the agricultural lifestyle as. However, a consistent theme throughout the interview data was that many participants chose to pursue agriculture for the perceived lifestyle associated with it instead of choosing it explicitly for career opportunity, illustrated in this quote.

“It's more of a lifestyle because it's something you have to live. You will live and breathe, it never sleeps, it never stops, you never get a day off. So, when you're so heavily invested in what you do, I would say it's a lifestyle, where as a career, it's a lot easier to just pickup and change. My career as an agriculture teacher, I can

pickup and leave behind when I go home each night. My cattle, they are always there to be cared for, every day.”

Some participants explained that it was definitely a balance between both a lifestyle and a career. For one, agriculture is “more than just a career, but also more than just a lifestyle.” Many other participants had poignant descriptions of how they view the relationship between lifestyle and career when choosing to pursue agriculture. These quotes are included in Appendix F. The value of an agricultural career for many is enmeshed in the lifestyle- a valuation beyond just the economic rewards of a career. This is illustrated by the following quote:

“I have some ownership, I have some buy in and some skin in the game and for me that is going to be more of a lifestyle. Ill show up early to work, I might stop by the farm on Saturday or Sunday to check in on things.... Its not just a job. It’s something I’m passionate about... Its something when I get home, I typically do things that complement the farm, build a chicken coop, plant a garden, instead of doing something different. A lifestyle follows with your values, your passions, your beliefs, a career is something that maybe you’re just doing because you like it enough and you get paid for it.”

The perceived benefits of such a lifestyle make up for the extra challenges found within the career. The lifestyle of agriculture likely contains such a strong draw, because of the inability to extract the career of agriculture from one’s daily life- the demands of

such work extend beyond a standard work schedule and instead depend upon nature and the timing of animals, weather, seasons and external markets. However, in return that lifestyle can reward participants in a variety of ways including closer connections to the land, increased flexibility in balancing personal and work business, and an increased sense of community and belonging.

#### Sub-themes from interview data.

##### Desire for agricultural involvement internalized

Interview participants were asked about the impact of a variety of external factors on their aspirations to enter agriculture including parental and social support, high startup costs, difficult land procurement, learning technical skills and other challenges. Frequently when talking about these external factors, participants would acknowledge the possible challenge posed by such factors, but often followed with statements like “I just wanted to do...” or “I did not really care about what they thought”. This indicates that participants credit a personal, internal drive for their aspirations to pursue this path. It appears that after exposure to agriculture in a career context, desire for an agricultural career is brought into the self, i.e. internalized, and largely beyond the influence of external factors including parental or social support, severe economic challenges and even a lack of technical knowledge. The perceived value individuals build into the agricultural career seems to surpass other external factors.

When examining this in the context of Bourdieu’s concepts of distinction, practice and socialization, this data combined with other findings indicating that agricultural

career exposure is very important to aspirations for an agricultural career, illustrates an important relationship between how an individual perceives the world and the actual social and environmental events the individual experiences. This relationship results in individuals' motivated preferences for a career in agriculture- preferences which are shaped by existing forms and concepts the individuals are exposed to throughout their socialization processes. The final step in this relationship is that individuals process their preferences into an internalized desire for a career in agriculture, from which they are then not easily swayed from by external forces.

#### Conscious choice to pursue agriculture

There was a variety of ways in which participants got their start in agricultural involvement. Many of them admit they happened upon their first agricultural job without looking for an agricultural job specifically. Despite these “accidental” beginnings in many cases, 61% of those interviewed stated that they felt they had made, at one point or another, a very conscious choice to either pursue agriculture or continue to pursue agriculture. This conscious choice manifested in a variety of ways including deciding to buy more livestock/increase acres in production, leaving a corporate job to join the farm, or finding ways to gain agriculture experience while also doing another career/attending school. This indicates that while discovery of agricultural employment may be ‘accidental’ in many cases, there are conscious decisions being made by individuals that this is what they want to do with their life: participants did not feel that they were just going along with the flow and working in agriculture because it was present for them.



Instead, they felt they were consciously choosing to seek out a career in agriculture. Further work could examine if this theme of pursuing agriculture as a very conscious decision is occurring in the larger young agriculturalist population in the US and if so, what possible benefits may come from increasing the opportunity for individuals to discover their first agriculture job. And would that initial job experience possibly lead to more youth choosing to pursue a career in agriculture?

#### Seeking alternative modes to entry

Several interview participants mentioned the challenges they experienced with feeling like one must pursue a typical mode of farming, i.e. where you have your own farm, and the ways in which they have combated that challenge. One participant said they felt pressure that the only way to be a farmer was to own your own farm, and that prospect was daunting enough, they almost stopped farming altogether. When they were able to find a way to farm without owning their own farm, that is what allowed them to continue to pursue agriculture. Without that opportunity, they admit they would not have continued being involved in agriculture. Other participants admitted much the same worries of the daunting responsibility and commitment that came with what they originally perceived to be the “successful” way to farm: owning and managing their own farm. Their ability to find an alternative mode to entering farming was what caused them to actually enter agriculture. Another participant talked about how they struggled to see a way into starting a typical private for-profit farm, but they really wanted to be involved with agriculture, so they drew on their non-profit experience to create an alternative model that seemed much more feasible to them. One participant commented that only

portraying one mode of entry into agriculture was limiting the success for young people trying to get started in agriculture by making it seem like the only way to farm successfully, is to own one's own farm. Their perspective is illustrated by the quote below:

“I see a lot of farm interns come through the nonprofit and most do not continue. It's a farm management internship, so you're getting trained to manage a farm but most interns don't end up doing it [farming]. I think it's because they're not exposed to the other ways to become a farmer. We don't talk to them about land access because we have city land to farm on. I'm trying to expose the interns to more ways to actually become farmers. My experience in Maine, where we were exposed to so many different business models and stories, it (farming) felt so much more accessible.”

It would be interesting for future work to examine if alternative modes of entry (alternative to owning a farm/ranch of your own) are a common theme among young or aspiring agriculturalists in larger sample sizes and how access to these alternative models may be affecting the entry of young people into the industry.

#### Other insights from interview data

This section includes topics which were discussed by interviewees and contain interesting insight into the experience of young agriculturalists in the state.

Why participants think there are not many young people in agriculture.

Interview participants were asked why they thought there were not many young people involved in agriculture. The answers provide interesting insight into what people currently experiencing being a young agriculturalist think is at the root of this issue. Many interview participants expressed that they felt there was not enough exposure to agriculture as a career option and that the visibility of agriculture as a business is just not present enough for young people choosing careers to see it as a viable option, particularly in urban and sub-urban areas. Also, several participants indicated that there is frequently not a clear path into an agriculture career: there are not a lot of resources to connect youth aspiring toward agriculture who come from a non-agricultural background to people in agriculture. It is also hard to fold someone into an existing farm structure and there is just not a clear segue into an agricultural career for many young people, even those who are familiar with agriculture, let alone those who do not come from an agricultural background.

Why participants are involved in agriculture.

At some point in their interview, most participants, whether prompted or not, made a statement (or several) about why they are involved in agriculture, or wanted to be involved in agriculture. While the reasons are too diverse to reveal any singular theme, the responses are still enlightening to the heart and diversity of the matter: why are these young people involved in agriculture? Why did they aspire to be in agriculture? There appear many reasons why participants are involved in agriculture but there are some common threads from participants' answers. These include getting deep personal

fulfillment from their work, indicated by statements such as they love what they do, they feel passionate about their work, or have genuine enjoyment of the work they do.

Additionally, several participants made statements about feeling of service to their communities and the world by growing/raising food as what inspires them to want to be involved in agriculture.

## DISCUSSION

This section will summarize the key findings of this study and make recommendations for further work on this topic.

### Key Findings

#### Exposure to agriculture in a career context is important

Interview findings indicate that a major theme behind agricultural career aspiration is being exposed to agriculture within a career context. This is supported by survey results as well. According to interview narratives, until they were exposed to agriculture within a career context, participants did not consider agriculture as a possible career for themselves. Several interviewees said “I just didn’t know any farmers” when asking why they did not consider agriculture as a possible career in high school. They also indicated that in communities where agriculture isn’t visible, youth don’t even realize it is a career option. Some participants stated that until they saw models of how to farm for profit, they did not consider agriculture as a job field they could enter. Other participants indicated the importance of agriculture in a career context by discussing how watching a friend’s parents raise cattle for profit, or growing up on their parent’s farm, which was the family’s sole source of income, showed them possible ways to be involved in an agricultural career successfully.

Career context agricultural exposure appears more necessary for inspiring agricultural career aspirations than generic agricultural exposure. A majority of survey

participants (51%) stated they did not seriously consider an agricultural career in high school, despite most of them (80%) saying their first agricultural memory occurred in childhood (at less than 8 years old). Many participants were exposed to agriculture at a young age, but yet did not consider it as a career path until after high school (and many times, only after being exposed to agriculture in a career context).

This idea that seeing agriculture in a career context may increase interest in an agricultural career can be supported by both the concept of socialization and Bourdieu's concept of field. Individuals require socialization to agricultural career options in order for them to consider a career in agriculture for themselves. Additionally, the networks and relationships (field) individuals are exposed to when seeing agriculture in a career context help to illuminate how agriculture can be accessible for the individual.

Of the 57% of participants that said they remembered a farmer/rancher coming to their school, 64% said it happened in elementary school, only 20% said in high school and just 14% in middle school. It is interesting that visitation fell off so sharply in high school and middle school when those periods of time are so important for socialization processes.

The lack of exposure to agriculture in high school could be detrimental to consideration of agriculture as a career despite being exposed to agriculture at younger ages. This further indicates that just exposing kids to agriculture may not be enough- perhaps they must see agriculture in a career context as well. This is corroborated by interview data in previous sections where participants indicated that seeing agriculture as a career option for themselves was important for them deciding to pursue a career in

agriculture, despite also having indirect exposure to agriculture at younger ages. This could indicate that providing exposure of agriculture to children is helpful but providing agricultural exposure in a career context to high school aged kids could be more valuable. Future studies with larger and more diverse sample populations should examine this conclusion in more depth. In the same vein, further work on why many young people did not seriously consider agriculture until after high school is needed to determine why this might be: is it driven by the fact that they were not exposed to agriculture as a career option until after 18 years old? Or is it indicative of shifting career priorities with age from dis-interest in agriculture changed to interest with more advanced age? Future work, more targeted toward this subject, could yield interesting results on when and how individuals decide on an agricultural career.

Future work should further examine this concept of “agriculture exposure in a career context” across broader agricultural populations in the United States as well as seek to identify the types of experiences which effectively expose individuals to agriculture in a career context. It would also be interesting to investigate the relationship between general agricultural exposure and career context agricultural exposure, this could be done both in new sample populations and within the population of this thesis study. While general agricultural exposure appears to be somewhat important, it is less clear to what degree.

#### Perceived lifestyle draws individuals in

It appears agriculture is not viewed primarily through a strictly practical career-choice lens when drawing young people toward it, instead, many consider the perceived

lifestyle that agriculture offers as something that attracts them. Participants were asked in both the survey and interview how much they considered various factors when aspiring to be involved in agriculture. When asked in the survey how important the lifestyle and culture agriculture offered was in making them aspiring to a career in agriculture, most participants said it was either somewhat important or very important. Participants were asked in both the survey and interview if they viewed agriculture more as a lifestyle, a career, or some combination. In the survey, most stated that they viewed it equally as a career and a lifestyle (64%) with 32% stating they view it more as a lifestyle and just 3% saying it is more of a career. In the interview portion, most stated they felt it was more of a lifestyle, some stated they viewed it as equally a career and lifestyle and none viewed it more as a career.

These results indicate a strong lifestyle factor for young agriculturalists in aspiring to work in agriculture. The interview responses were especially enlightening to the relationship between agriculture as a lifestyle or a career. Some participants indicated that the challenges of agriculture are what made it more of a lifestyle to them- the demands that expand beyond just a typical job. Frequently, one cannot extract their work from their personal life- they live where they work, they shift their schedules and plans around the work that needs done on nature's schedule, and they socialize around their work. Work and personal lives are inextricable and thus, it is a lifestyle over a career. For others, the lifestyle they get to live in agriculture (i.e. being outside, connected to the land, enjoying their work, as some examples) is what justified the immense challenges they face, often for scant monetary compensation.



This research did not examine the individual's definitions of the agricultural "lifestyle" and thus, cannot presume to define that lifestyle definitively. However, data from the survey and interview indicate that portions of the "lifestyle" of agriculture includes maintaining connections to the land, increased flexibility in balancing personal and work business, an increased sense of community and of providing for others. This study can conclude that the perceived lifestyle of agriculture to the individual is a powerful draw towards an agricultural career. This indicates a profound intrinsic value for many young people involved in agriculture that exists outside of strictly economic considerations. The perceived lifestyle appears to be an important part of both individuals' habitus in the study, as well as the shared habitus of the young agriculturalists that were studied. Interesting further work would be to examine more closely how young individuals define the agricultural lifestyle and what about those definitions draws them toward involvement in agriculture.

#### Personality traits- risk taking and risk tolerance is high

Participants were asked about their perceived personality traits, to see if any possible relationships exist between their self-identified personality traits and aspirations for an agricultural career. In the survey, participants were able to rate how well they felt certain personality traits applied to them. The survey data on personality traits is represented in Table 4 in the results section above. The majority of survey participants felt that they are comfortable (or somewhat comfortable) taking risks, enjoy flexibility and variety in daily tasks, feel successful at task management and time prioritization, and are comfortable making decisions. Future work could examine these personality traits and

potential commonalities among young agriculturalists more successfully within a larger sample size. To what degree these personality traits influence individual values-building around a career in agriculture, or how they may impact motivations for agricultural entry is not yet known but would be interesting to examine in future work.

In the interviews, participants were asked if they felt they shared any personality traits with others in agriculture or if they felt most people in agriculture shared any particular personality trait/s. Nearly all interview participants stated they felt that risk taking or at least, risk tolerance was common among agriculturalists. Interview participants also mentioned that agriculturalists tended to be very flexible (in decision making and planning), hard-working and problem solving. There were several indications by participants that someone in agriculture “had” to be that way- they indicated that one in agriculture “had” to have those traits or they would struggle to be successful. What exactly those “must-have” traits were varied a little by participant, but most stated an importance of risk taking (or at least tolerance), flexibility to adjust, and the need to accept that there is much beyond the agriculturalists control at any one moment (handle uncertainty). Further work examining young agriculturalists' risk tolerance comparative to other young individuals could yield interesting results about the traits of those interested in agriculture. Also worth examining in the future is the impact of “alternative modes of entry” and their relationship to personality traits, specifically risk taking/tolerance. In the results section, several interview participants indicated they only remained involved in agriculture because they found a way to work in agriculture without

owning their own farm. How this idea impacts the value placed on risk taking/tolerance in the agricultural habitus, as well as how it impacts the entry of those who perhaps do not share high risk-taking traits is worth exploring in future work. Participant observation as well as interviews could be especially useful in exploring these themes.

Desire for agricultural career heavily influenced by “personal factors”- less so by economic factors

Survey participants indicated they felt strongly motivated by “personal factors” when aspiring for an agricultural career (represented in Table 5 in Results section). Their responses to a variety of questions on why they wanted a career in agriculture and what factors motivated them toward a career in agriculture indicated that economic/external factors did not motivate them as strongly as “personal factors” did. Interview data supported this finding with participants citing strong motivation from “personal factors” including lifestyle aspirations, personal fulfillment, and work satisfaction. Interview and survey participants indicated that their aspirations for an agricultural career were not affected by parental support, social support or the prospect of economic barriers. Additionally, when asked to provide in their own words why they wanted to be involved in agriculture (in both the survey section and interview section) participants most frequently cited personal reasons. These sentiments include statements such as “I do it because I love it.” “I feel it is my passion to grow food.” “...the pay is not great. There is not a whole lot of incentive to do it other than I enjoy it.” “It felt fulfilling” “I enjoy the lifestyle.” However, participants acknowledged the effects of economic realities and hurdles to actually obtaining and maintaining a career in agriculture.

In addition to the “personal factors” mentioned above, agricultural exposure is important to agricultural career aspirations. Almost all survey participants had experienced at least one agricultural exposure situation in their childhood or youth such as farmers markets, county or state fairs, or family/community gardens. When asked if they thought their childhood experiences contributed to their desire to enter agriculture, 88% of survey participants said yes, they did think it had contributed to their desire to enter agriculture. This, combined with comments regarding agricultural exposure in the interview portion, indicate that exposure to agriculture is an important developmental factor to career interest.

The strong reported influence of “personal factors” when aspiring to an agricultural career, coupled with the necessary agricultural exposure indicated by participants as being important illustrates that socialization to agriculture is very important in the value-building and subsequent development of agricultural aspirations of the individual. This value-building process results in a distinction around agriculture for individuals. This distinction shapes aspirations for an agricultural career that results in “personal factors” being a very important motivator for individuals- more so than external, economic factors.

Participants revealed much about their values in their statements about “personal factors” and how that impacted their aspirations for an agricultural career. While participants credit these “personal factors” as more important to their motivation for agricultural entry than economic/external factors, what they are really indicating is where their values lie: values that are built through lifelong socialization processes, the fields

individuals inhabit, as well as the habitus they develop around the practice of agriculture. Participants strongly value the “personal factors” in relation to agriculture, and thus, those “personal factors” are more critical to individuals than economic ones when aspiring to a career in agriculture.

This strong influence of personal factors when aspiring to an agricultural career is promising for the future of agriculture and proportion of young agriculturalists in it. While the larger economic and systemic barriers need to continue being addressed to ensure access for younger generations, those issues are extremely complex and multifaceted: solutions will be challenging and slow developing. However, solutions to build up these “personal factors” and experiences for individuals through their socialization processes are far more tangible and attainable.

## CONCLUSION

The challenges facing young people in agriculture are numerous and significant, however, as this study has explored, there are young people interested in pursuing agriculture despite these challenges. Ultimately for most of this study's participants, pursuing agriculture stemmed from personal preferences developed through each individual's unique socialization process. Childhood experiences are an important element of socialization leading to participant's aspirations to enter agriculture; nearly all participants had agriculture-related memories and experiences from their childhoods. Many participants stated an important step beyond just agricultural exposure- they also required exposure to agriculture in a career context in order to consider pursuing a career in agriculture themselves. Seeing agriculture in a career context is when agriculture as a career option or successful business is visible to them. This indicates the importance of agriculture and agriculture career visibility for children and youth during key socialization periods.

In both interview and survey data, participants indicated strongly that their lifestyle preferences, enjoyment of the work and legacy goals played larger roles in their desire to enter agriculture than more economic factors such as earning potential or start-up barriers. It should be noted that most participants acknowledged the economic reality of having to make enough money to live on and the challenges that that brings to getting into or staying in agriculture. This illustrates the complex relationships and processes which are going on when examining agricultural entry of young people and the

proportion of young farmers and ranchers in the US. It appears that individuals develop a valued preference toward and distinction for agricultural careers which extends beyond strictly economic value.

Driving factors behind agricultural aspirations were identified in both open-ended survey responses and interview data were surprisingly consistent among participants, yielding strong main themes about what influenced their aspirations for an agricultural career. These themes include that personal factors heavily motivate aspirations for an agricultural entry, that agricultural entry is more of a lifestyle decision than a career choice, exposure to agriculture in a career context is necessary, and that risk taking and risk tolerance are important.

These themes indicate that developing an aspiration to enter agriculture is a motivated choice that is internalized from individuals' experiences, environments and relationships. This indicates the strong influence of socialization processes and individual fields in creating a value-building processes which leads individuals to aspire for an agricultural career. The experiences of individuals, coupled with their environments lead ultimately to the development of a preference for and thereby distinction toward agricultural careers, which when internalized by individuals proved to be the guiding force behind seeking out an agricultural career for most participants. It should be noted that desire for agriculture entry and actual attainment of agricultural entry are separate.

This is not to say that barriers to entry do not prevent entry from being attained, they often do as is illustrated by previous literature and by some participants in this study. But in most cases, it appears that the potential for those barriers to impede entry does not

dissuade individuals' aspirations for an agricultural career, at least in this sample population. Risk tolerance or risk acceptance was widely mentioned and indicated as necessary to some degree to achieve success in agriculture generally.

Future studies could expand their scope to include a greater sample of young agriculturalists to build data on the concepts introduced by this study. Further exploration of this study's findings in larger and more diverse sample sizes could yield data valuable to better supporting young agriculturalists as well as illuminate ways to expand interest in and viability for this possible career path for young people. Valuable future work could also take place by re-visiting this study's participants and further exploring the themes identified by this work. In particular, building a stronger ethnographical approach to investigate more in depth the individuals' value-building and socialization processes would be valuable. Additionally, future work should explore the degree of agricultural socialization that is most useful to developing a sustainable interest in agricultural careers among young people.



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## APPENDICES

**Appendix A**

## Core Survey Questions

This represents the core survey questions from Track 1, the track with the most numerous responses. These core questions were present in all four survey Tracks, but wording was slightly modified (past versus present tense) to be understood appropriately by participants in each Track. Due to length considerations, full length survey tracks have not been included but can be requested from the researcher at [ilm61@humboldt.edu](mailto:ilm61@humboldt.edu)

Do you or (if applicable) your spouse/domestic partner engage in off-farm labor?

- Yes
- No

Please select the primary reason for off-farm labor.

- I/We do NOT engage in off-farm labor.
- It is necessary to meet my/our financial obligations.
- I/We enjoy the extra income.
- It is personally fulfilling.

If you were not employed in agriculture, what job/career would you want to pursue?

Have your parents ever received a substantial amount of their income (50% or greater) from agricultural activities?



If you answered yes to the above question, please share which agriculture industry your parents work or have worked in. If you answered no, please share the types of jobs/careers your parents have had.

Select the county in which the majority of your childhood was spent (birth-18 years old). If not in Colorado, please select Other and then list the county and state, or the country if not in the United States.

Think back to your first memory that is directly agriculture related (Example: watching/riding on a tractor, feeding cows, visiting a pumpkin patch, going to work with parents). What age is this memory from?

- Under 8 years old.
- 8-11 years old
- 12-17 years old
- 18-21 years old
- 22 years or older

Which of the following most closely describes the circumstances of your first agricultural memory from the question above?

- Going to work with a parent/relative.
- Visiting a friend's farm/ranch.
- A school field trip.
- Growing up on a farm/ranch.
- Visiting an agritourism business (Ex: pumpkin patch, you-pick-it farm, CSA).

- Visiting a fair/farmers market/farming exhibition or show.

(Optional). If you would like to elaborate, briefly describe what your first agriculture related memory is from the question above.

Do you remember a farmer/rancher ever coming to your school or touring a farm/ranch with your school? Select all that apply.

- No
- Yes, in elementary school.
- Yes, in middle school.
- Yes, in high school.

As a child/young adult, did you experience any of the following? Select all that apply.

- Roadside farm stands
- Farmers markets
- County or state fairs
- Family garden/raising livestock
- Community garden
- None of these

Do you feel your experiences as a child contributed to your desire to enter agriculture?

- Yes
- No

(Optional) If you would like to elaborate on how you feel your experiences as a child contributed to your desire to enter agriculture, please do so here.

Did/Do you participate in any of the following organizations? Select all that apply.

- 4-H
- FFA (Future Farmers of America)
- Collegiate Farm Bureau
- Farm Bureau Young Farmer & Rancher Program
- National Farmers Union Youth/Collegiate Programs
- National Farmers Union Beginning Farmers Institute
- National Young Farmers Coalition
- Any national livestock breed association's youth program
- None
- Other (please specify).

In high school, did you consider a career in agriculture?

- Yes! I considered it very seriously.
- I thought about it but never seriously considered it.
- No, I never considered it as a career path.

Do you feel your experiences in high school contributed to your desire to enter agriculture?

- Yes
- No

(Optional) If you would like to elaborate on how you feel your experiences in high school contributed to your desire to enter agriculture, please do so here.

At what age did you begin to consider a career in agriculture seriously?

- Under 18 years old.
- 18-21 years old
- 22-30 years old.
- Over 30 years old.

Please rate the following statements based on your perceptions of social support for agriculture.

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
I feel like my community supports my agricultural activities.					
I feel like there are members of my community who I can connect with about my agricultural activities.					
I feel like there are support systems I can utilize in my community including friends, family and community members.					

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
I feel like the general public (across the United States as a whole) supports the kinds of agricultural activities I engage in.					

Did the public's attitude toward agriculture play a role in your decision to enter the agriculture industry?

- No, it played no role.
- Yes, I considered it. It was a positive motivator toward an agricultural career.
- Yes, I considered it. It deterred me from an agricultural career to some degree.
- I thought about it but it did not affect my decision.

Do you like having, learning and using the latest technology?

- Yes, I always have the latest technology.
- I upgrade to new technology as I need to in order to stay current in my life.
- I avoid using new technologies as long as possible.

How do you perceive technology use in agriculture?

- Agriculture lags behind most other industries in technological innovation, adoption and use.

- Agriculture somewhat adopts and utilizes technology as it is developed.
- Agriculture is advanced and progressive in creating, adapting and using new technology.

Did your perception of technology in agriculture factor into your decision to enter agriculture?

- No, not at all.
- Yes, it drew me towards agriculture.
- Yes, but it deterred me from agriculture to some degree.

Rate your feelings toward the following statements.

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
I wanted a career in agriculture for the lifestyle it comes with.					
I wanted a career in agriculture because of the culture surrounding it.					
I wanted a career in agriculture so I could be self-employed.					
I wanted a career in agriculture so I could work outside.					
I wanted a career in agriculture so I could make enough money to live comfortably.					

Rank your feelings toward the following statements.

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
I enjoy working alone.					
I enjoy working with people different than me.					
I am comfortable taking risks.					
I enjoy working with people similar to me.					
I enjoy flexibility and variety in daily job duties.					
I handle uncertainty well.					
I feel successful at time management and task prioritization.					
I feel comfortable making decisions.					

Rank how important the following considerations are in your decision-making process.

Statement	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Ensuring the farm/business is profitable for this year.					
How sustainable the operation/business is over the next 10-15 years.					
Where my career/my operation is heading in the next 20-40 years.					
The impact of major decisions on future generations.					

Do you view agriculture more as a career or a lifestyle?

- I view it more as a career.
- I view it more as a lifestyle.
- I view it equally as a career and a lifestyle.

Do you have student loan debt?

- Yes, I currently do.
- No, not currently, but I did in the past.
- No, I have never had any.

What was the role student loan debt played in your entry into agriculture?

- Not applicable, I never had any student loan debt.
- Student loan debt has had no effect on my entry into agriculture.
- Student loan debt has made my entry into agriculture harder.
- Student loan debt has made my entry into agriculture easier.
- Other (please specify).

Have you ever experienced burnout in your agricultural entry process or in your agricultural career?

- Yes
- No

(Optional) Please describe why or how you experienced burnout.

Please indicate how important the following factors were in making you want a career in agriculture.

Statement	Not a Factor	Very Unimportant	Somewhat Unimportant	Somewhat Important	Very Important
It is what my parents do/did.					



Statement	Not a Factor	Very Unimportant	Somewhat Unimportant	Somewhat Important	Very Important
Everyone else around me was doing it.					
To make a lot of money.					
The lifestyle and culture it offers.					
Since I was young I have always wanted to be a farmer or rancher.					
I did not like the way I saw farming being done and I wanted to change it.					
I wanted to continue the agricultural legacy into the future.					
I wanted to grow my own food.					
I wanted to contribute to feeding the growing number of people on the planet.					

Please select the greatest challenge to you when getting started in agriculture.

- I didn't know where to begin/how to get started.
- Lack of knowledge on how to farm or ranch.
- Financial cost (of land, equipment, inputs ect)
- Lack of access (to land, credit, inputs ect).
- Lack of support from family/friends/community.
- Other (please specify).

Please select the second greatest challenge to you when getting started in agriculture.

- I didn't know where to begin/how to get started.
- Lack of knowledge on how to farm or ranch.
- Financial cost (of land, equipment, inputs ect)
- Lack of access (to land, credit, inputs ect).
- Lack of support from family/friends/community.
- Other (please specify).

Please select your greatest support when getting started in agriculture.

- I had a strong background and skills in agriculture.
- I had access (to land, equipment, inputs, ect)
- I had financial stability.
- I had lots of support from family/friends/community.
- Other (please specify).

Please select your second greatest support when getting started in agriculture.

- I had a strong background and skills in agriculture.
- I had access (to land, equipment, inputs, ect)
- I had financial stability.
- I had lots of support from family/friends/community.
- Other (please specify).

(Optional) If you had known you were going to end up working in agriculture, would you have done something differently in your youth/younger life or during your entry process? Please describe below.

Summed up in your own words, why did you enter agriculture?

Please indicate the primary reason why you did not consider an agricultural career seriously in high school (for those who selected they didn't consider an agriculture career in high school)?

- I had no idea what I wanted to do as a career.
- I wasn't aware of agriculture as a career/it was never presented as an option for me to consider.
- I didn't want to be a farmer or rancher.
- I didn't have the skills to farm or ranch and I didn't know how to get them.
- I didn't know how to get started in an agricultural career.
- I knew it would be very expensive and didn't think I could afford it.

- Other (please specify)

Why did you consider agriculture as a career in high school (for those who selected they did consider agriculture in high school). Please describe below.

## Appendix B

### Interview Worksheet

Guiding questions utilized throughout the interview process as needed.

#### Thesis Interview Worksheet

Interview Number:

Date/Location:

Subject Name:

Subject Phone Number:

#### **Demographics:**

Male / Female

Age:

Years in Agriculture:

Highest Ed level:

Degree/Certification:

Type of Occupation:

Production Ag

Agribusiness

Ag Inputs

For Production Ag:

Type of Ag:

Size of Operation:

Organizational Structure:

Did your parents farm/ranch/are they involved in agriculture?

Do you farm and ranch on the same place your parents did/ Do you farm/ranch with your parents?

If so, how did you “get in” into the farm (did you buy in, inherit etc):

How did your parents feel about you choosing to farm/ranch?

Did you “come back to the farm” after a period away for other work or school?

Why did you leave/come back?

**Beginning Prompt:**

Could you walk me through your journey to becoming involved in agriculture? Can you include any key milestones or points in your life where you realized this is what you were going to do? And include any events or experiences which stand out to you as important in your decision:

**Potential Follow Up Questions:**

- Would you say you made a conscious decision to have a career in agriculture?  
When? And why?
- What do you think was the most driving factor in your decision to farm or ranch?  
Was it more personal or heavily influenced by economic factors?
- Were or are there any factors or issues you saw as a huge barrier to your career or career choice?
  - How did you deal with that?
- Did you consider this as a career option for yourself in high school or college?
  - Why/Why not?

- Why do you think/what do you think caused your thoughts to change between then and now? Do you think any programs you were involved with growing up significantly shaped your career decision? How so?
- Did the social support for agriculture influence your decision to farm/ranch? Did you feel pressure to do something other than agriculture? Or were you put off or inspired about doing ag because of social perceptions?
- Did you want to be a farmer as a young child? Did this change over the course of your development? What do you think caused those various changes?
- Why did you choose your given production practices?
- The survey asked about your first memory directly related to agriculture. Could you elaborate on that memory? How were you able to have this experience/memory?
- Do you feel you were drawn to agriculture because of the other people in it? In particular, their personalities?
- Do you feel you have a similar personality/many things in common (experiences/background ect) with others in agriculture? Did this draw you to this career? To what degree?
- If the participant had mixed/distinct/unclear results on the personality portion of the survey, ask further personality evaluative questions to get a better result.

## Appendix C

### Survey-Wide Demographics

General survey-wide demographic data in the subsections below represents all eligible participants from all tracks of the survey.

#### Geographical Distribution.

There were participants from 21 of Colorado's 64 counties. This included participants from six of the top 10 highest producing agricultural counties. The table 9 below shows the Colorado counties represented, their state ranking for agricultural output and how many participants there were from each of the represented counties. The output ranking is measured in the value of products produced and taken from Colorado Department of Agriculture (2019).

**Table 8.** Sums up participant's county of residence at the time the survey was taken.

County	Number of Participants	County's State Agricultural Output Ranking
<b>Rio Grande</b>	8	14
<b>Larimer</b>	6	9
<b>Alamosa</b>	5	18
<b>Boulder</b>	5	28
<b>Weld</b>	5	1
<b>Conejos</b>	4	25
<b>Denver</b>	2	56

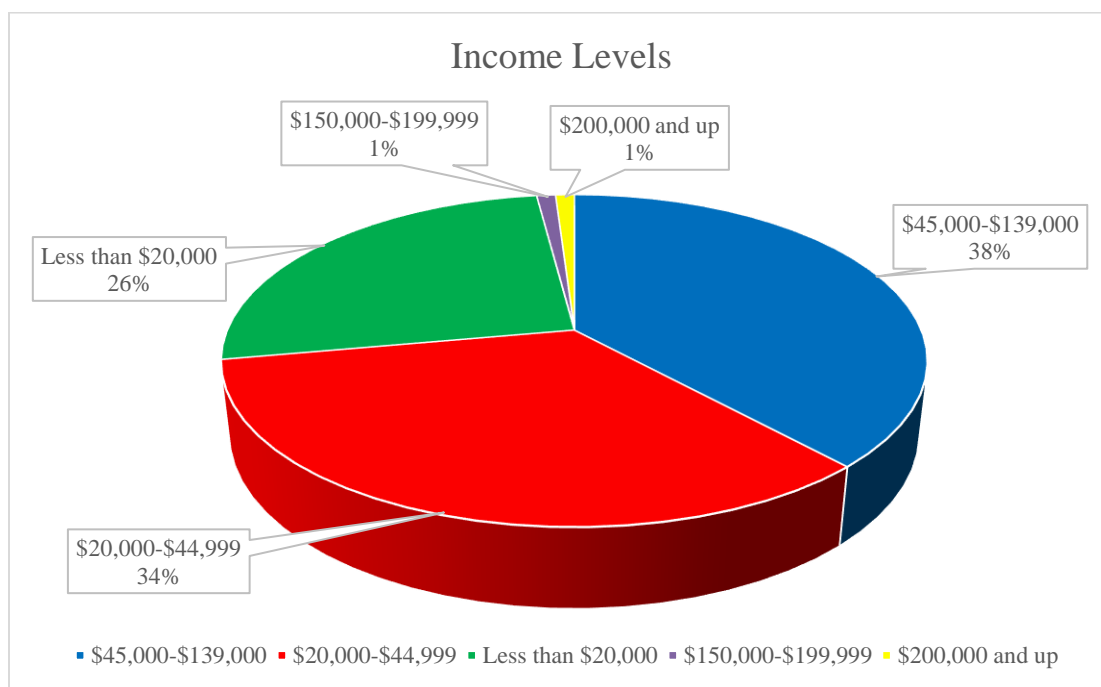


<b>County</b>	<b>Number of Participants</b>	<b>County's State Agricultural Output Ranking</b>
<b>Logan</b>	2	3
<b>Adams</b>	1	10
<b>Arapahoe</b>	1	34
<b>Costilla</b>	1	39
<b>Delta</b>	1	22
<b>Garfield</b>	1	29
<b>Jefferson</b>	1	48
<b>Kit Carson</b>	1	5
<b>Mesa</b>	1	16
<b>Moffat</b>	1	31
<b>Montezuma</b>	1	27
<b>Montrose</b>	1	20
<b>Morgan</b>	1	4
<b>Saguache</b>	1	13

### Income levels.

Figure 7 illustrates the distribution of income of survey participants. Participants were asked to indicate their annual income including all agricultural and non-agricultural earnings. This question did not specify to participants if they should indicate individual income or household income in their answer, an oversight of the researcher. The income level bracket choices for this study were defined to match the official income bracket

definitions used by the US Census Bureau. According to the US Census Bureau, the average individual income in Colorado is around \$35,000 and the average household income is around \$72,000. This indicates that 37% of survey participants may be slightly better off economically than the average individual in Colorado, but on a household basis, they fell into the average bracket for the state. The 33% of participants that reported income between \$20,000 and \$44,999 are within the state average bracket for individual income or, slightly below average for household income. The 25% of participants selecting \$20,000 or less are well below the state average income for both individuals and households.

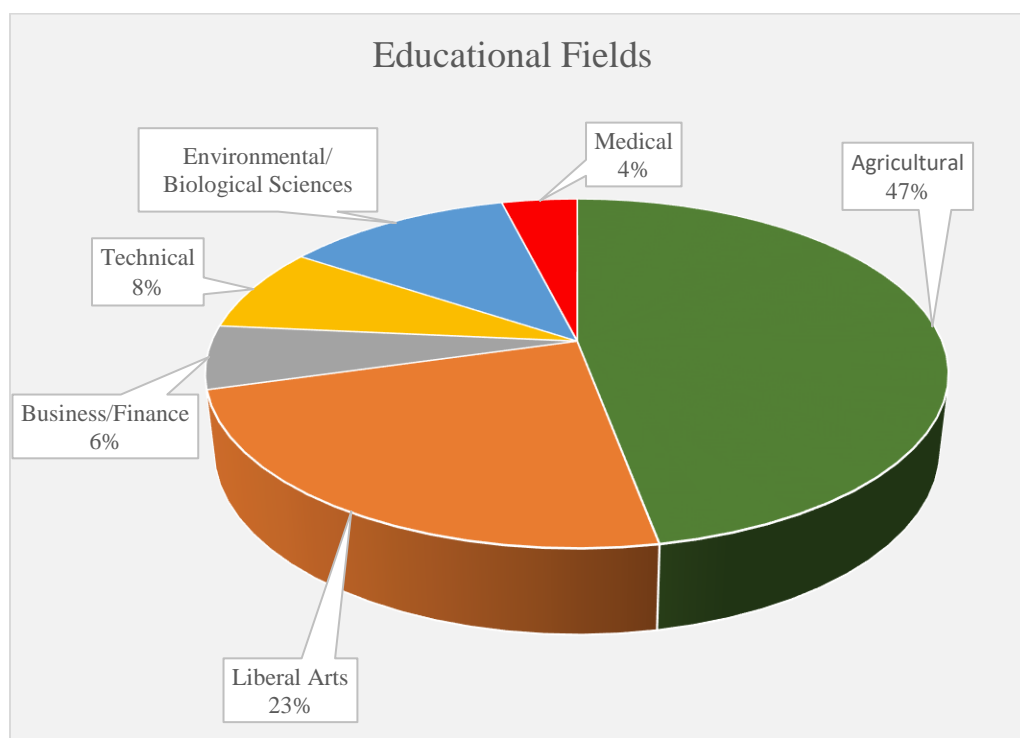


**Figure 7.** Income levels identified by participants, including all agricultural and non-agricultural earnings.

### Degree Fields of Participants.

Participants were given the option to specify what their degree or certifications were in or what area of study they had attended college for (even if they did not complete a degree or certification). 51 survey participants (86% of survey participants) gave answers.

Specific degrees or certifications of participants were sorted into the following educational categories: Agricultural, Liberal Arts, Business/Finance, Technical/Vocational/Trades, Environmental/Biological Sciences and Medical. See Figure 8 below for the breakdown of degree types and frequency among participants. The agricultural category includes any degree directly pertaining to agriculture such as animal science, crop and soil science, agriculture education, agribusiness, general agriculture, agricultural law etc. Liberal Arts is a general category for degrees related to the social sciences, psychology, English, teaching, political science etc. Business and Finance includes any general or specific business, marketing, or finance degrees (excluding agribusiness degrees). The technical category is for technical college degrees such as welding, nail technicians, mechanics etc. The Environmental/Biological Sciences category includes any environmental studies or sciences, wildlife sciences or biology degrees. The medical category included nursing, medical doctor and/or medicinal herbology degrees. The majority of any single type of degree was agriculture related (47% of all degrees). However, agriculture related degrees did not represent the majority of all degrees obtained by participants: all other degree fields combined made up 53% of the degrees that participants held.



**Figure 8.** Illustrates the breakdown of fields of degrees, certifications and attempted post-secondary fields of study reported by survey participants.

## **Appendix D**

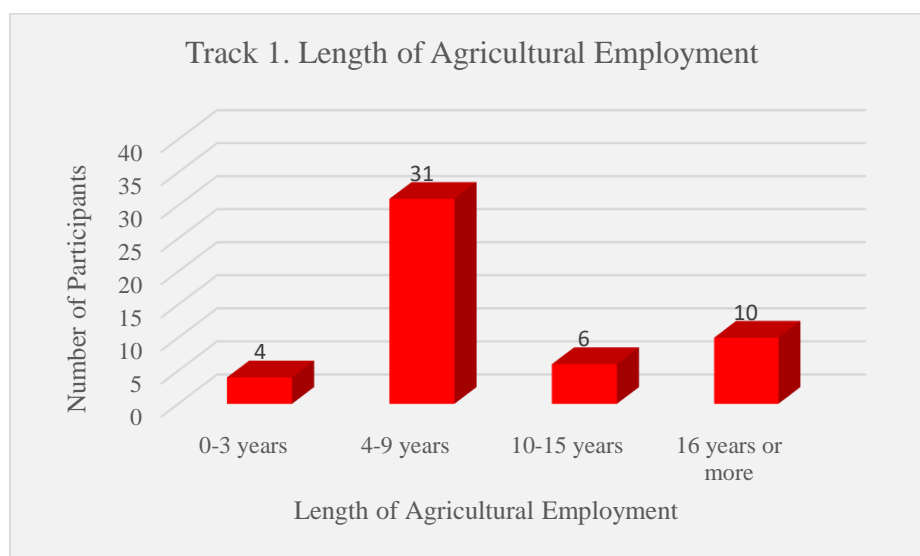
Track specific data from each of the survey tracks.

### Track 1 Demographics

Participants currently involved in agriculture were the most numerous of respondents and were directed to Track 1. This was likely related to the recruitment method of conducting outreach to existing agricultural networks. Traits of those participants currently involved in agriculture were examined including demographical data of these participants such as how long they have been involved in agriculture, what their current agricultural roles are, if they own property and how they procured it, what products they produce and how they produce it, among other things.

#### Years in Agriculture & Occupational Fields

60% of those employed in agriculture had been employed between 4 and 9 years. 19% had been employed for over 16 years. Given the age constrictions of this study (those under 35 years old) anyone employed in agriculture for over 16 years was employed in agriculture from when they were under 18 years old. This provides interesting future possible inquiry to examine how many of those employed in agriculture when they were under 18 years old (presumably mostly from summer agriculture related jobs in high school, but also possibly from full-time agricultural work taking place at ages under 18) remain employed in agriculture and if that under 18 employment has any bearing on desired or actualized agricultural career entry for those individuals. 11% of respondents have been employed in agricultural work for 10-15 years and 7% for just 0-3 years.



**Figure 9.** Illustrates the length of agricultural employment in years for participants in Track 1: those currently involved in agriculture.

Participants were asked to identify their current occupation/role in agriculture.

The choices were: Production Agriculture Owner/Operator, Production Agriculture Worker, Agribusiness Owner/Worker, Non-Agriculture Sector, Not Currently Working or Other. Given that previous literature indicates many individuals in agriculture also work another non-agricultural job, or multiple agricultural jobs, participants were able to select more than one category.

The majority of survey participants selected Production Agriculture Workers (32 participants), however there was also 25 participants that selected of Production Agriculture Owner/Operator. There were 8 participants that selected Agribusiness Owner/Work and 5 selected Non-Agriculture Sector Work, 1 selected that they were

“Not Currently Working”. Most of the respondents selected more than one occupation.

These occupational combinations and their frequency are shown in Table 10 below.

**Table 9.** Illustrates the various combinations of occupations provided by participants as well as the number of participants that reported each occupational combination (n=49).

Table 4. Occupational Combinations, survey track 1	
Prod. Ag. Worker Only	19
Prod. Ag. Owner/Operator Only	12
Ag. Bus. Owner/Worker Only	1
Prod. Ag. Owner/Operator & Prod. Ag Worker	8
Prod. Ag. Owner/Operator & Ag. Bus. Owner/Worker	2
Prod. Ag. Worker & Ag. Bus. Owner/Worker	2
Prod. Ag. Owner/Operator & Non-Ag	2
Prod. Ag. Worker & Non-Ag	2
Prod. Ag. Owner/Operator, Prod. Ag. Worker & Ag. Bus. Owner/Worker	1

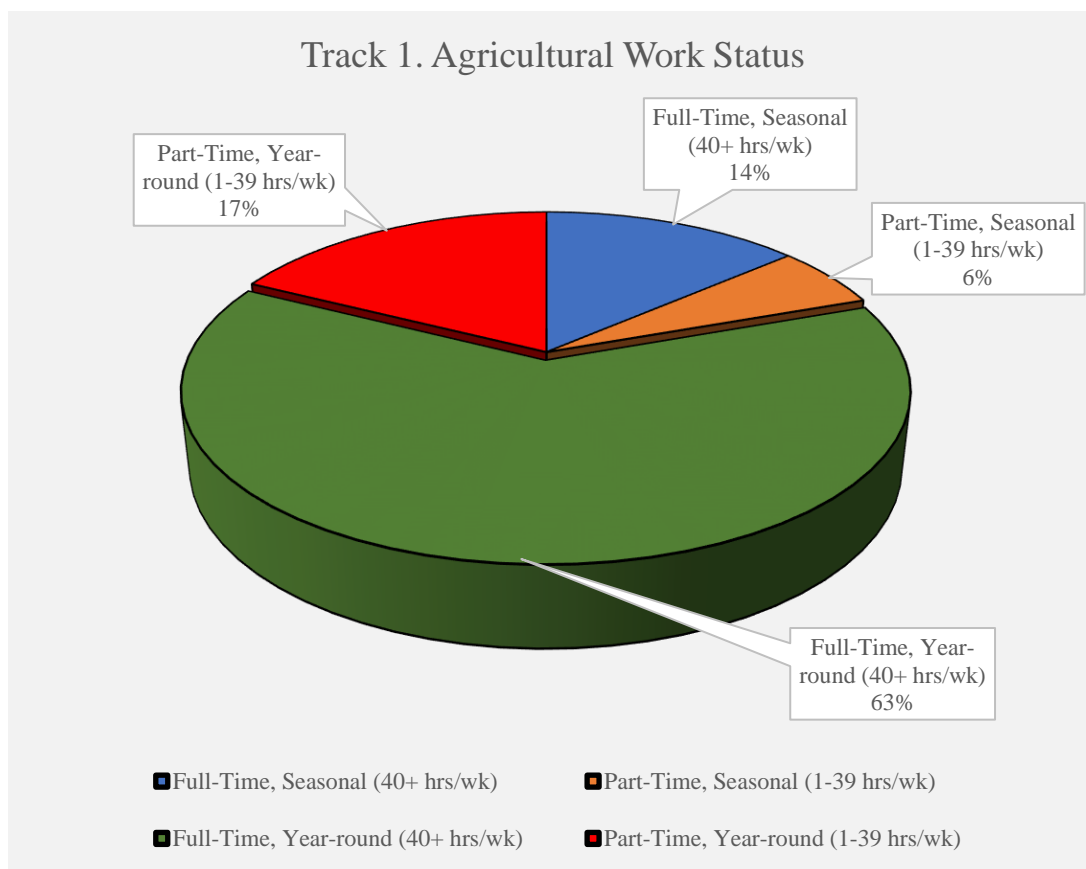
As Table 10 shows, Production Agriculture workers were the most numerous at 38% of survey responders (n=19), followed by Production Ag Owner/Operators at 24% (n=12) of survey participants. Only 2% (1 participant) identified their occupation as solely an Agribusiness Owner/Worker. Many agribusiness owner/workers were also production agriculture owners or workers. The most numerous occupational combination was Production Agriculture Owner/Operator combined with Production Agriculture Worker, at 16% (8 participants). The rest of the occupational combinations were more evenly distributed with 4% being a Production Agriculture Owner/Operator combined with

Agribusiness Owner/Operator. 4% Production Agriculture Worker combined with Agribusiness Owner/Worker. 4% Production Agriculture Owner/Operator combined with Non-Agriculture sector. And lastly, 4% of survey participants indicated Production Agriculture Worker combined with Non-Agriculture sector. 2% selected an occupational combination of Production Agriculture Owner/Operator, Production Agriculture Worker and Agribusiness Owner/Worker.

#### Work Status of those currently involved in agriculture

Figure 10 illustrates the work status of track 1 survey participants. Note that the majority of participants said they were full-time, year around for their agricultural work (over 60%).

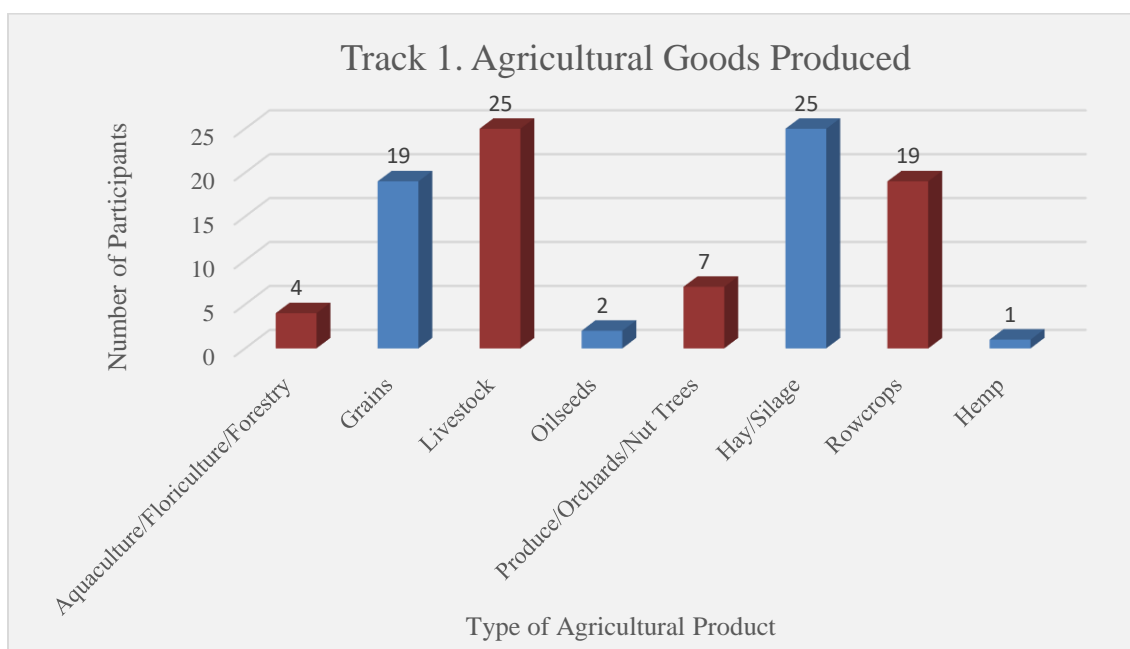




**Figure 10.** Illustrates the current agricultural work status of the participants (n=51).

### Production Agriculture Participants

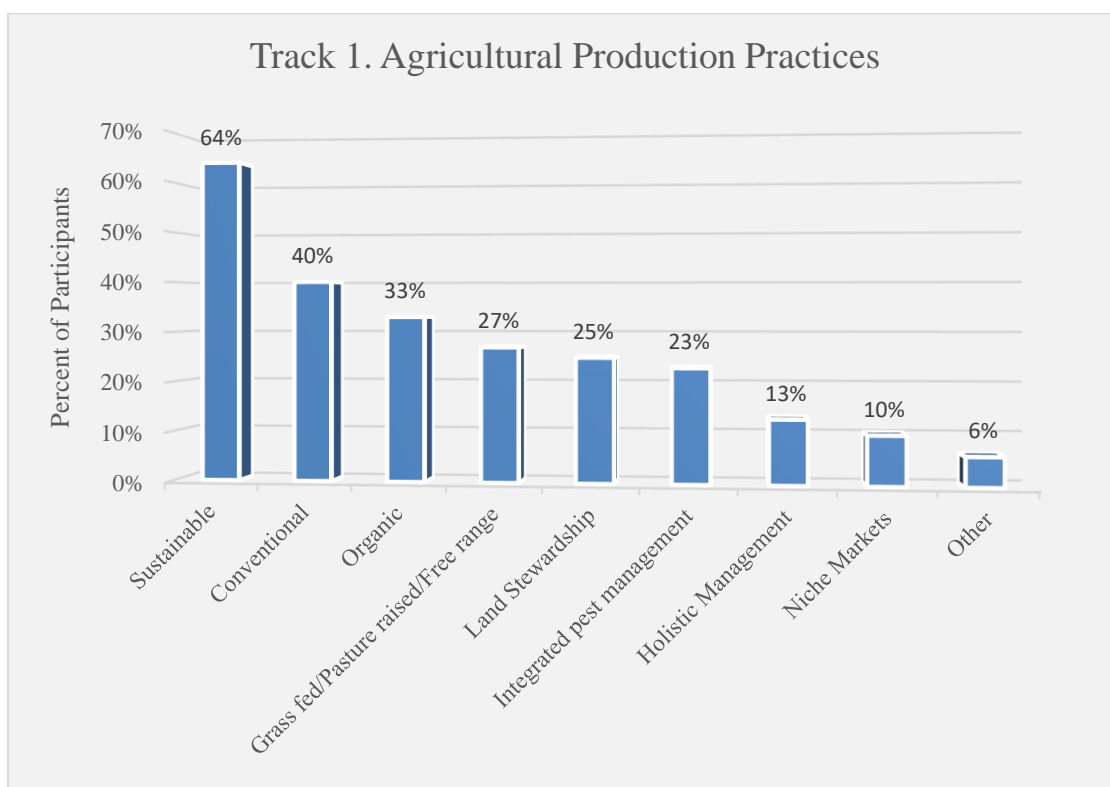
When asked what their role in agriculture is, track 1 survey participants most frequent stated production agriculture, i.e. those actively producing agricultural goods. The products that young agriculturalists grow or raise are diverse. Figure 11 summarizes the variety of products, and the frequency with which they are produced by respondents. Note that many farmers and ranchers reported more than one product produced by themselves or their operations.



**Figure 11.** Agricultural goods reported being produced by track 1 participants (n=51).

The types of production practices that survey track 1 young farmers and ranchers reported using to grow and raise all of these products are also diverse and varied. Survey track 1 participants were asked “How do you describe your production practices? Select all that apply.” Pre-selected types of practices were listed for participants to choose from. These practices are either common industry terms, or common buzzwords seen within the literature currently. Options included: Sustainable, Conventional, Land Stewardship, Organic, Integrated Pest Management, Grass fed/Pasture raised/Free range, Niche Markets, Holistic Management, None of these or Other. They could select as many of the options as applied to their operation and most participants did select more than one option. Figure 12 illustrates all of the survey track 1 responses. By and far, the most

popular production practice selected was “sustainable” with 64% of participants selecting that option. As mentioned, many participants selected more than one answer so the percentages total greater than 100%.

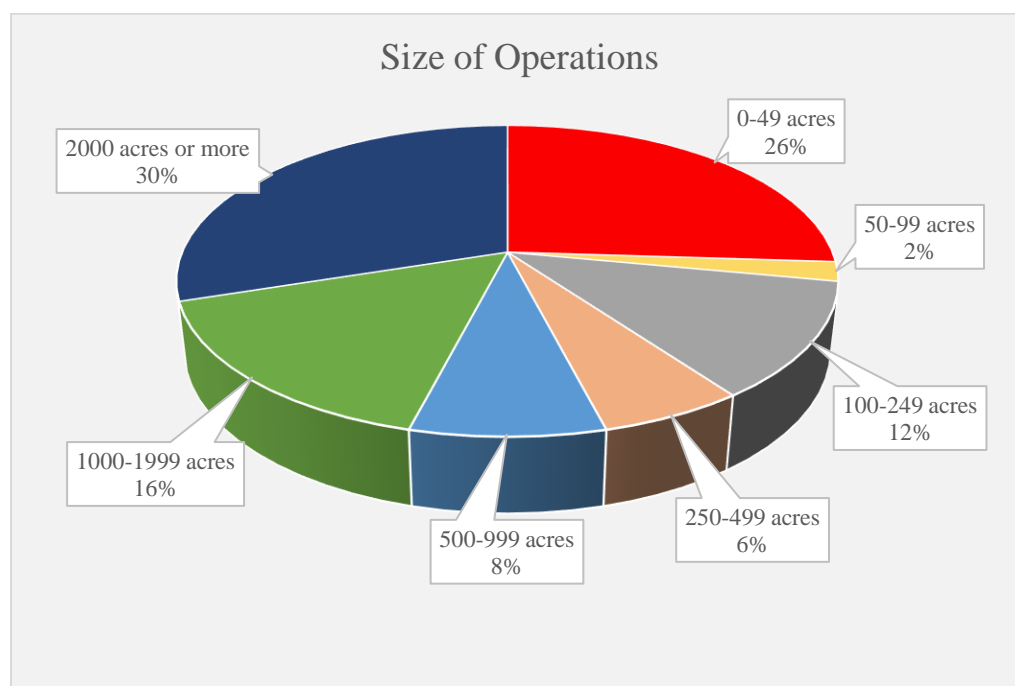


**Figure 12.** Illustrates the types of production practices that track 1 survey participants indicated they utilized on their farms and ranches, and what percentage of participants stated that they used each type of practice (n=51).

The size of operation on which these goods were produced varied greatly with very small and very large producers making up over half of all respondents: 29% said they operated on 2000 or more acres and 25% of participants said they operated on 0-49 acres. From there, there were smaller margins between operation sizes. Next most numerous were operations sized 1000-1999 acres at 15% and 100-249 acres at 11%. 6%

operate on 250-499 acres, 7% on 500-999 acres, and almost 2% operated on 50-99 acres.

Figure 13 illustrates the distribution of farm size among producers.



**Figure 13.** Size of operations of track 1 participants currently involved with production agriculture (n=50).

#### Track 2: Those Aspiring to be Involved in Agriculture

There were only two participants directed to Track 2, which encompasses those aspiring to be involved in agriculture. This is interesting given the direct outreach of this study to three main university agriculture programs in the state of Colorado. One possible explanation for the low number in this category is that those who are students of agriculture are already involved in agriculture as well, and so they were directed to the

track 1 option for those currently involved in agriculture. This is corroborated by the fact that 13% of track 1 respondents identified they were currently students. This low number of Track 2 respondents additionally has potential implications that many of those aspiring to enter agriculture may not be students. It also potentially implies that those aspiring to enter agriculture lack connections to the greater agricultural community- particularly connection to the types of organizations and institutions that were contacted to help distribute this survey. And thus, the study missed an entire demographic of aspiring agriculturalists due to the dissemination methods of this study. It is impossible to say for certain but it is likely that the methods of outreach utilized most for this survey favored those young people already involved in agriculture and not as much those who may be aspiring to enter agriculture, which are inherently a much harder population to identify and reach out to. Future work attempting to reach out more to aspiring agriculturalists may be useful in further determining roles personal factors may play in aspiring for agricultural entry. Regardless of the lack of still aspiring agriculturalists, the main focus of this study is why young people want to be involved in agriculture, regardless of whether or not they are currently aspiring to be in agriculture, or already involved in agriculture. And so the low number of those aspiring to be involved in agriculture is not detrimental to the findings of the study. Given the very small number of participants in this track, on its own there is little for meaningful data or trends however the small number of participants on this track does itself open up some interesting possible lines of future inquiry about aspiring agriculturalists.

### Track 3: Those Formerly Involved in Agriculture.

#### Relevant demographic data

Interestingly, all of the 6 respondents who were directed to track 3 for those formerly involved in agriculture were female. Also worth noting, 50% of track 3 participants reported residing with a spouse/partner and children; this is much higher than the survey-wide result of 18%. This could be worth exploring in future studies to see if this is a trend that would emerge in a larger sample size. All participants had at least a high school diploma, 50% reported having completed bachelor's degrees, 16% had some college, and 16% had a graduate degree. Of the 66% of track 3 participants who had a college degree of some nature, 50% had an agriculture related degree, 25% had culinary/nutrition related degrees, and the remaining 25% of participants had degrees unrelated to agriculture or food. Interestingly, all 6 track 3 participants were within 60 miles of an urban center (population 50k or more people) compared to 45% of all survey participants. This is also the highest proportion of any of the tracks (just 39% of those in track 1 who are currently involved in agriculture live within 60 miles of an urban center).

#### Their Agricultural Employment

66% of the participants were production agriculture workers when they were involved in agriculture. 16% (n=1) was a production agriculture owner/operator, and 33% (n=2) were agribusiness owner/workers. When they were employed in agriculture, the majority (66%) stated they got 50% or greater of their income from agriculture. 33% said they did not receive 50% or more income from agriculture. Over half (66%) of

participants were involved in agriculture for 0-3 years, the remaining 34% of participants were involved in it for 4-9 years.

33% were employed full-time, year-round in agriculture. 50% were part-time, year-round and 16% were full-time, seasonal. The various types of agriculture they engaged in was also greatly varied and included row crops, produce/orchards/nut trees, hay/silage, livestock, dairy, and cotton. Also of note, one worked in fertilizer sales. They identified many types of production practices including sustainable, conventional, land stewardship, organic, integrated pest management, niche markets, holistic management, and biodynamic.

50% worked on operations sized 0-49 acres but 16% were on operations sized 50-99 acres, and 16% were on operations over 2000 acres. The participant who was a production agriculture owner/operator rented the land she operated on. 60% reported that they or their spouse did not engage in off-farm labour when involved in agriculture, and the 40% who did, stated that it was necessary to meet their financial obligations.

#### Why they exited agriculture.

Distinguishing this track from the others is that they are no longer involved in agriculture. When directly asked why they exited agriculture, respondents had varied answers. 40% said they could not be profitable enough or make enough money. 40% reported their health/a family member's health caused them to exit agriculture. And 20% selected "Other".

When asked if public attitude/social support played any role in their agricultural exit, only one participant indicated that the public's attitude toward agriculture motivated them to exit agriculture. 60% said that public attitude played no role in their exit and 16% said that they considered the public's attitude towards agriculture, but it deterred them from exiting agriculture.

From the open-ended and multiple choice responses provided about why they exited agriculture, along with responses to the open-ended question about if they had anything else to add about their entry into, or exit from agriculture, it appears that the majority of the participants formerly involved in agriculture did not wish to leave agriculture because they desired a different career. Instead, it appears various circumstances required their exit from agriculture such as inability to pay off debt while working in agriculture or having children. Several participants expressed a desire to return to agriculture in the future.

#### What are they doing now?

50% of participants reported their current occupation as a stay at home mom, although 16% of those stated they did still raise animals. 16% reported being a teacher, gardener, and childcare provider. 16% reported non-profit/government work. And 16% said they were unemployed/disabled. 83% are still working in the job they did after leaving agriculture, 17% were students upon leaving agriculture and no longer are.





## Appendix E

### Counties of Youth

Sums up the counties that survey participants (n=42) reported spending a majority of their youth in, if those counties are located in Colorado and includes the counties' agricultural output ranking in the state.

**Table 10.** Represents the participant's primary county of residence in their youth, if those counties were located within the state of Colorado. Also represents the counties ranking in agricultural output (measured in dollars).

County of youth residence	Number of Participants	County's State Agricultural Output Ranking
Rio Grande	9	15
Weld	4	1
Logan	3	4
Otero	2	10
Montrose	2	16
Larimer	2	11
Denver	2	55
Costilla	2	33
Conejos	2	30

<b>County of youth residence</b>	<b>Number of Participants</b>	<b>County's State Agricultural Output Ranking</b>
<b>Arapahoe</b>	2	32
<b>Alamosa</b>	2	19
<b>Adams</b>	2	13
<b>Boulder</b>	1	31
<b>Jefferson</b>	1	48
<b>Kit Carson</b>	1	5
<b>Mesa</b>	1	21
<b>Montezuma</b>	1	27
<b>Phillips</b>	1	8
<b>Pueblo</b>	1	25
<b>Saguache</b>	1	14

## Appendix F

Supporting Quotes from Interviews on the relationship between agriculture as a lifestyle and career.

“It’s more of a lifestyle because it’s something you have to live. You will live and breathe, it never sleeps, it never stops, you never get a day off. So, when you’re so heavily invested in what you do, I would say it’s a lifestyle, where as a career, it’s a lot easier to just pickup and change. My career as an agriculture teacher, I can pickup and leave behind when I go home each night. My cattle, they are always there to be cared for, every day.”

“I guess it is a career because you have to make a living and you have to make money to survive, but it’s a lifestyle because you know, I can make a lot more money selling insurance but that’s not a lifestyle. You do have to compromise some earthly pleasures to keep doing this, but you gain other wonderful earthly pleasures by doing it.”

“I’ve always had a career goal [of being in agriculture] and moving to this new job helped with that. Ill be a lot more involved in our Ag community than I was before. But as far as becoming a full-time rancher, I’m not sure I’ll be able to make that work. That’s more of a side hobby at this point. I enjoy the lifestyle.”

“Its definitely a lifestyle but career wise, anymore with the price of everything, it’s a lifestyle that has to be supplemented by a better career. Having a something else too, or someone in the family having a day job.”

“I have some ownership, I have some buy in and some skin in the game and for me that is going to be more of a lifestyle. Ill show up early to work, I might stop by the farm on Saturday or Sunday to check in on things.... Its not just a job. It’s something I’m passionate about... Its something when I get home, I typically do things that complement the farm, build a chicken coop, plant a garden, instead of doing something different. A lifestyle follows with your values, your passions, your beliefs, a career is something that maybe you’re just doing because you like it enough and you get paid for it.”