



**Utah Soil Health Network
On-Farm Trial Participant Report
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Executive Summary

Interviews of the participants in the Utah Soil Health Network (USHN) On-Farm Trial were conducted during the summer of 2022. Thirteen of the 15 participants' data is included in this report. This report is a summary of (1) the responses that focused on soil health and (2) responses we felt would be the most fruitful for the team to know at this beginning point in the project.

Producer and Operation Characteristics

- Producers range in age from 32 to 70 years old. The majority are men and all 13 producers identified their race as white. They tend to have higher levels of education, with five either having some graduate work or a master's degree, and three with a bachelor's degree. The majority are full-time producers, and the majority partner with others for help on the farm/ranch.
- Size of acres varies dramatically, ranging from one producer having two acres, to another having 2500 acres in their operation. In addition, some producers have no livestock, although a large number (11) do have livestock on their land. The type of livestock varies greatly.
- Seven of the producers are on land that has been in their family for generations, while six are on ground that is not multi-generational. Two of the producers own no land, four own all their land, and six both own land and lease land from another landowner to operate.

Participation in Project, Expectations and Concerns

- The dominant reasons given by producers for their participating in the USHN On-Farm Trial project was to gain knowledge (noted by six), followed closely by their farmland/ranchland needing help (noted by five), with a third reason being the producers (noted by five) want the data gained/lessons learned to be useful to both the team doing the study but also to others who want to implement soil health practices on their lands in Utah.
- Over the five year duration of the project producers hope to increase their knowledge about soil health (noted by nine of the producers), and increase productivity on their land (noted by five).
- Five of the producers indicated they have no concerns about participating, with the others indicating various concerns that are detailed in the full report.

Use of Conservation Practices

- All 13 of the producers indicated they used at least one of the following practices: cover crops, no-till/reduced till, soil health testing, rotational/sustainable grazing. Those practices used most often included no-till/reduced till and soil health testing. However, all producers who indicated they have done the latter also indicated it was basic soil testing, and not necessarily "soil health" testing.
- The time involved in implementing the conservation practices, making sure it/they was/were done correctly was the biggest challenge noted by the participants, with six of them expressing this. Dissatisfaction with soil test results and costs involved with implementing the conservation practices were each noted by four producers as challenges

they have faced. Other challenges included lacking the knowledge to successfully implement the practices, cover crops leaving the ground dry, and weed control with no-till.

- Seven producers indicated they have not used cost share in conjunction with these conservation practices, with five indicating they have. For all five, the program has either expired or been done away with. Thus, no one interviewed indicated they are currently in a cost-share program.

Importance of Soil Health to Operation, Soil Health Knowledge, and Information Resources

- Nine producers deemed soil health very important/critical to how they manage their operation while three producers noted soil health was/is important *if* it improves their operation/production.
- Five producers indicated they were beginners when it came to their knowledge on soil health, four indicated their knowledge was good/average, and four indicated their soil health knowledge was above average.
- In terms of information sources used for soil health, four of the producers have attended the annual Utah Soil Health Partnership conference in St. George, Utah. Reasons for not attending the conference included not knowing about it, and the distance the producers would need to travel to attend.
- In terms of other resources used for soil health information, the top three used include: Utah State University (USU) and USU Extension (indicated a source by six participants); YouTube (indicated by five) and NRCS (Natural Resource Conservation Service (indicated by four)). The interview data also shows producers often rely on a number of different resources for their soil health information.
- Four producers felt there was someone local (i.e. in their area) they could go to when wanting information on soil health while nine of the producers indicated they have not found anyone local they feel they can turn to for information on soil health.
- Farm field days were noted by nine producers as a resource they would use for soil health information, soil health workshops/conferences were favored by seven participants, a mentoring program was popular with nine of the participants, and online materials (e.g., videos, publications, website, social media, etc.) were favored by nine participants.

Challenges to Operating a Farm/Ranch

- Financial issues/constraints were noted by eight of the producers as one of the biggest challenges to operating a farm/ranch today, followed by lack of water/drought (noted by six of the producers).

More thorough analyses and discussion are located in the full report which follows.

Utah Soil Health Network On-Farm Trial Participant Report

Introduction

Interviews of the participants¹ in the Utah Soil Health Network On-Farm Trial were conducted during the summer of 2022. Three participants were interviewed face to face during the Project Kick-Off meeting in June. The additional participants were contacted via both email and phone multiple times to schedule an interview. Ten of the participants were interviewed via phone. Thus, 13 of the 15 participants' data is included in this report.²

Because diversity in producers was strived for with the project, there are producers in the project ranging from farming/ranching two acres to 2500 acres. It also means there are those who have no livestock to others who have 3300 head of livestock. Thus, for some of the interview questions, there was great diversity in the responses. This report focuses on the patterns that were dominant in the interviews regarding specific questions. This is not intended to be a comprehensive report of all interview questions asked, but rather, a summary of (1) the responses that focused on soil health and (2) responses we felt would be the most fruitful for the team to know at this beginning point in the project.

We begin by briefly discussing the producer and their operation characteristics.

Producer and Operation Characteristics

Characteristics of both the producers and their operations are included in the Appendix (Tables 1 and 2). There is a range of ages of producers, from 32 to 70 years old. The majority of producers are men and all 13 producers identified their race as white. They tend to have high levels of education, with five either having some graduate work or a master's degree, and three with a bachelor's degree. The majority are full-time producers, and the majority partner with others for help on the farm/ranch.

As previously noted, the acreage worked varies dramatically in size among the producers, ranging from one producer having two acres, to another having 2500 acres in their operation (Table 2). Also as previously noted, some producers have no livestock, although a large number (11) do have livestock on their land. This livestock varies greatly, and all types of livestock mentioned are contained in Table 2.

For seven of the producers, they are on land that has been in their family for generations, while six are on ground that is not multi-generational. Two of the producers own no land, four own all their land, and six both own land and lease land from another landowner to operate.

¹ The terms participant and producer are used interchangeably throughout the report.

² Email and phone contact was made with the other two participants, however, despite numerous attempts, getting an interview scheduled with one was unsuccessful, and the other was interviewed in November 2022, after this report was written, thus, their responses are not included here. In addition, not all participants answered all interview questions, thus at times the total N does not equal 13.

Participation in Project, Expectations and Concerns

We asked the producers why they chose to participate in the Utah Soil Health Network On-Farm Trial project. The dominant answer was to gain knowledge (six indicating this), followed closely by their farmland/ranchland needing help (five indicating this), with a third reason being the producers (five also indicating this) want the data gained/lessons learned to be useful to both the team doing the study but also to others who want to implement soil health practices on their lands in Utah. These varied responses are reflected in the quotes below.

Farm we bought was severely overgrazed for decades. Running it and trying to regenerate it and trying to make it produce more and pay for itself, I've become quite interested in regenerative farming. So that's the number one reason. When this trial came along I thought this would be a great resource where I can have people with expertise help me where we can monitor a little bit closer the condition to soil and what's working and what's not working to help it. I really enjoy doing stuff like this. Our families have done it this way for generations. And you know, why do it any different? Well, I like to do things differently. So I want to think differently. I want to learn some things and do some things and better differently.

I am running this farm with my parents. And it was leased for years and years....and the ground is just depleted. And of course we don't get enough water. And it's just really been a hard trial to get things to grow and find the best way to manage the land, to manage the animals we raise to just make it work for us. And so I saw this soil health trial and thought this would be a perfect opportunity for me to learn a little more and also for my dad to learn maybe some different ways than what he was taught when he was farming.

We bought just a terribly tired old ranch. One of the first things we did was enroll in an NRCS soil health program. And I'll be honest with you. I think it was a complete waste of funds and time. The practices they wanted us to implement were better suited for the Midwest. And that's why I'm here. I want to participate in this project so it goes according to the environment I'm in, which is not the Midwest.

We talked about it as a conservation district when it came around, and we knew it was available. And honestly, soil health in [county] they push a lot of stuff on us and most of it does not work. It's arid, it's dry. There's usually not enough moisture for one crop, let alone a cover crop. But I think there's things we can do to improve and even help the people doing the study realize, there's different things, different places.

We just think it's important stuff....we want very much to be able to share our successes with people. So what we're doing has very little value in the big picture if we don't share it and help other people do it in a cheaper, more successful way. So if publishing our results to this study and having people at the university be able to go to other producers later on and say, you know, it's not as hard as it used to be, look at these results, then we get more people involved with soil health practice, then it feels like our work has more value in the long term.

There's not a lot of research in southern Utah and on vegetable farms, and we're always trying to get stuff down there. We thought it would be good to do research.

We also asked the producers what they hope to get out of their participation in the project over the five-year duration of the project. Not surprisingly, some of their responses were similar to their reasons for involvement in the project, with increased knowledge about soil health noted by nine of the producers, and increased productivity on their land noted by five, illustrated in these quotes:

Knowledge of how to help our soil....how to increase the amount of carbon in our soil and the water holding capacity. Knowledge of what works to improve our soils and what doesn't work. So we don't have to waste our time on doing those other things.

More exposure, more ideas. We were kind of hitting a dead end on things that we can do to further our soil health. And we've been doing this for a little while. We're just looking for better practices and help generate the best practices and to have a say in what's going on, have a voice at the table.

Knowledge, just some knowledge. If it works, if I can open some eyes and show my brother-in-law and father-in-law that hey, if we do this, here's the result. If I can figure out how to help build those soils, because that's the building block. If you don't have good soil, you're not gonna grow anything.

Just a little bit of knowledge? My preconceived expectation is probably a fail. If I can walk away with a little bit of knowledge and say, okay, let's not waste any more time with this, or this is productive, then I've gained something.

A little better strategy of improving the soil, so I can improve my crops or my grazing. And maybe even some things I can do to cultivate the soil health as far as getting those microbes growing and just increasing the health, so I don't have to worry about draining the nutrients and whatnot in the soil that I'm trying to use....and to kind of keep up on current trends or current knowledge or current practices. I'm probably a little behind in some of those areas, so hopefully to learn some of those too.

I'm hoping to be able to, especially in our water crisis we're in right now, to be able to optimize use of my land through good soil using the minimal amount of water possible, for optimal production.

Five of the producers indicated they have no concerns about participating, with the others indicating various concerns as noted below:

My biggest concern is will this really work? Will it really make a difference?...my dad was taught in the traditional farming ways, and so....I'm hoping to help him learn more. But a concern would be that maybe he decides he doesn't want to accept this, you know?

I guess I don't have a full understanding exactly of what they're gonna do....as long as it doesn't interrupt my operation too much. As long as I can still use it [land] to put cows or horses. Or this year I cut a crop of grass hay off it. And so if I can still do those things, then I don't have any hesitation. ...I've applied to get a pivot and a well line or do something to improve my watering. And I don't know if that's gonna affect this study or not, if I get the grant.

My only concern is my time is so limited, I hope that I'm able to keep up with the recording and communicating part that they want from us.

My only worry is I think we're in a very unique situation, and a different situation we're at with our soil types. And so I'm hoping that they'll look at that and make adjustments on what needs to be done on our soils. What works in other places doesn't always work at our place....and you know, a lot of these projects that come down, they are based on people [who] have feed operations, cattle operations, and that type of stuff. And not all of us do that. A lot of us raise and sell our feed, we're running a cattle operation on the side. Some of the things they've already mentioned aren't going to work for me....

That it not be valuable. I'm hoping it goes in a direction that truly brings value to our style of land.

Use of Conservation Practices

The producers were asked about various conservation practices they have used or currently use. All 13 of the producers indicated they used at least one of the practices asked about (cover crops, no-till/reduced till, soil health testing, rotational/sustainable grazing), with several noting that some of the practices (particularly cover crops and no-till) were not doable given their land was in pasture grass. As shown in Table 3, those practices used most often included no-till/reduced till and soil health testing. However, a caveat needs to be made regarding the soil health testing, for all producers who indicated they have done this also indicated it was the basic soil testing, and not necessarily “soil health” testing. We focus the discussion here on the challenges the producers have experienced using these practices, to help the team understand better the difficulties these producers are encountering and to aid in understanding why the producers have at times stopped using the practice.

The time involved in implementing the practices, making sure it/they was/were done correctly, was the biggest challenge noted by the participants, with six of them noting this as a challenge. This is illustrated in the following quotes:

From what I understand if it's [rotational grazing] done right, you need a certain amount of time before you come back to a pasture. And sometimes we don't necessarily have enough time because we don't have enough acreage to wait the full amount of time to get back to. And so that's sometimes a challenge. And the way our operation is, we have to load them [livestock] and take them in trailers up to one field. And so we have extra costs and time and stuff to take them back and forth as needed.

A lot of work to move livestock 3 times a week. A 2 hour stint each time, takes time.

Time it [no till] takes, removing the old crop at the base, would be faster to go in and just till it and have the tractor make all the beds and rows for you.

Dissatisfaction with soil test results was an additional challenge for the producers, with four of them indicating this, seen below in these comments:

...for soil testing, the discrepancies in data can be a little challenging and confusing. Sometimes you'll take multiple samples from a field and get drastically different results.

The soil tests always come back the same. So I felt like I was not solving a whole lot. It's hard to fix something if you don't know what you're fixing. I gotta know what the soil needs and the crops need....it's lacking in organic matter.

...regarding soil testing, all it does is say the same thing. Apply more nitrogen. I wish I could get better results. But I've been quite disappointed in what I get out of Utah State when I've submitted those tests. They just say add more nitrogen. And I don't know that you call that soil health. I don't know that they're actually looking at what's in the soil.

Costs involved with implementing the conservation practices was noted for four producers as a challenge, exemplified in these comments:

[we] had to purchase the electric fence all ourselves, some of the stuff is quite expensive.

The application of manure and those things to help build up the organic matter has been cost prohibitive. And so that's made it a challenge.

Other challenges noted included lacking the knowledge to successfully implement the practices, cover crops leaving the ground dry, and weed control with no-till.

Producers were asked if they have used cost-share with any of these practices. Seven indicated they have not, with five indicating they have, but for all five, the program has either expired or been done away with. Thus, no one interviewed indicated they are currently in a cost-share program.

Importance of Soil Health to Operation

Producers were asked about the importance of soil health to how they manage their operation. Nine producers deemed it very important/critical:

I feel like it's highly highly important. For one, you know our water, we seem to get cut back on water every year. And we really need to be able to find ways to have our soil retain the moisture better...I feel like soil health is the number one thing we need to improve upon for our farm.

It's extremely important, it takes just as much water to water poor soil as it does good soil pretty much. And so being able to have optimal soil health certainly helps you make better decisions on your water use. And water is always the limiting factor in our area. There's never enough water.

It's the foundation. If you don't have good soil, you don't have crops.

Three producers noted soil health was/is important *if* it improves their operation/production:

It's important to me in theory. But it's....that's a hard one. Like I understand why it's important and why it's meaningful but it's extremely difficult to implement. So it becomes less important as production starts...it can be something that gets left behind because it's not a necessity to the production.

I don't make decisions based on soil health. I make decisions based on quality of feed for my cattle and quantity. If you have a soil health practice that you can show me is going to increase the quality feed into my dairy cows, forage and grains, which decreases my input costs, I'm interested in learning more. You have to show me how it's going to positively impact my operation.

I'm in it for the business. And what it amounts to is, I think soil health could be very valuable in knowing what's best for the long-term production.

Soil Health Knowledge and Information Sources

Producers were asked to evaluate their level of knowledge on what makes soils healthy. While recognizing this is relative, five indicated they were beginners, four indicated their knowledge was good/average, and four indicated their knowledge was above average. This range of perceived knowledge is seen in the quotes below:

It's pretty beginning, pretty minimal. I really don't know a lot about soils....this is brand new for me.

Low low low low.

I am well versed enough to know that I want to know more. And know that I am very limited in what I really do know. I know enough to know that I don't know enough.

I know enough to get myself into trouble. I know enough to say I don't know enough but I know a lot more than the average person.

That's a tough question. 1 to 10 compared to your average guy, I would probably put myself in the 7 range. We're really learning a lot. We're very interested. We educate ourselves as much as possible. It's all been firsthand experience. We read what we can. We attend conferences when we can. We take advice from others. But soil is so subjective geographically....so a lot of what we do know, we know about our area and our experiences on our farm.

The participants were also asked what resources they use for information on soil health. All resources used are included in Table 4. The first resource they were asked about was attendance at the annual Utah Soil Health Partnership (USHP) conference in St. George, Utah. Four of the producers have attended, an average of 2.5 times the last five years, with a range of attending one to five. When asked about the usefulness of the conference, the producers shared the following:

Have attended 3. In theory, it sounds good. But it's the implement it, and getting it worked into rotation, getting it on the ground and going at the soil. That's the hard part. And you don't get any of that out of the conference. It's all just talk about how good soil health is, and in theory, what this will do for you, but really doesn't address the hard questions and challenges.

I picked up 1 or 2 nuggets. It was very much introductory. We've been doing this a long time. We're looking for things to take the next step and that's what's hard to find.

Reasons for not attending the conference included not knowing about it, and also the distance the producers would need to travel to attend.

In terms of other resources used, the top three resources used include: Utah State University (USU) and USU Extension (indicated a source by six participants); YouTube (indicated by 5 participants) and NRCS (Natural Resource Conservation Service (indicated by 4 participants)). And as seen in the remarks below, producers often rely on a number of different resources for their soil health information.

I use Facebook quite a bit. If I have a question, I go on there. And I know I'm not the only one. There's a lot of people who do. There's a lot of different questions....it's a pretty good resource....That's where I heard about Allan Savory [book Holistic Management] and Gabe Brown [book Dirt to Soil]. You have people that have been doing it for a long time that comment and give their advice, and it's a pretty good resource....There's also some YouTube channels that I like to follow with regenerative grazing and soil health practices, such as Greg Judy.resources from Utah State or other universities around Utah, there are some.

It's pretty much YouTube and podcasts. I just Google search a lot and try to find things out. I feel like there are a lot of the farmers that I've followed from Facebook or YouTube that are doing cover crops and rotational grazing. They seem to be pretty open if I've really needed to ask questions. There's some Facebook groups that I've thrown some questions out there and I've gotten answered.

We've got some great resources at the NRCS and Soil Health partnership. They've put on workshops and conferences that we attend. There's always the old YouTube University. There's lots and lots of people out there doing, trying the same stuff we're trying and sharing their successes and failures online. Some big names, some real influential characters are out there and we follow their work pretty closely.

Four producers indicated they felt there was someone local (i.e. in their area) they could go to when wanting information on soil health but it should be noted the four who indicated 'yes' were lukewarm in their response, as seen in several of their comments below:

Yeab, I do. Our Extension Service, I've talked to them about a few things. And our Conservation District here, I've talked to them about a few things. I think it's new enough to this area that there's a lot that isn't known.

Yes and no. Our neighbors have been helpful. But they're also "this is the way we've always done it."

Nine of the producers indicated they have not found anyone local they feel they can turn to for information on soil health, ranging from one stating, "I wouldn't know where to go" to:

I really haven't found anyone local. We tried to talk to our local farmers and ranchers in town. And really, it's hard to find anyone local that does any practices like that. It's almost frowned upon. And they kind of look at us like we're a little bit crazy just talking about it. So it's not something right now locally that there's many people that I can talk to about it.

Definitely not anyone local. We are the only people operating with these practices at scale in our region....when we started it was just a lot of laughs. They would come over and laugh right in your face.

There's a few at Utah State I know that I could ask. No one local.

There's people up here [Logan] that we talk to. We go to conferences in California and talk to people. But no one's doing it in this climate, on our scale.

Producers were also asked about resources they wish existed to help them with soil health, with four specific ones offered. Farm field days was noted by nine producers as one they would use, given "I'm very hands on. I like to see and touch, talk to people that have done it," as one told us. Various caveats were given about the field days though, including "Yes if available locally" and "If it's working."

Soil health workshops/conferences were favored by seven participants, with two adding they would like them *if* they were held close to their farm/ranch.

A mentoring program was popular with nine of the participants, with several sharing, *“I would use that, somebody that I could visit with about struggles and challenges and get different ideas. That would be useful. That would be helpful.”* And *“I really feel like a mentoring program would be beneficial.”* Two of the nine who said they would be interested in this did note only if it would be available locally, with one adding, *“I think in theory that’s a great idea. But in practicality of my location, it’s not really going to happen.”*

Online materials (e.g., videos, publications, website, social media, etc.) were favored by nine participants, not a surprising finding given the list of online sources in Table 4 participants currently use. Several of the producers shared,

To be honest, I really do like the Facebook and social media thing like YouTube. It’s fun to see how other people do it and what they’re doing and what benefits they see.it’s a hard thing because there’s no way to really write a manual on if you do this, this will happen. If you do this, this will happen. Doesn’t really work out like that. So kind of something that somebody has to go through and try and see what works for themselves.

One that stands out most to me is a web/internet-based resource where I can go on and there’s videos or something to read about it would be really ideal because then I could access that anytime I need it.

Having some kind of [online] list, you know, if you’re having this issue, watch this. Or if you want to improve this, watch this. Categorizing some of this information to a problem, a specific problem.

After being asked about specific resources, several producers added additional thoughts on the list of resources, ranging from they feel they already exist and it’s a mindset that needs to change rather than new resources, to issues they see with information resources that do exist, as seen in the following quotes:

All of that is in place and really well done. I think what’s missing in the real world is real interest and real support from real producers. It’s one thing to be academically informed about these things. It’s another thing entirely to see the good ol’ boy next door figuring it out and go, no, it really does work.in the West, most farms are still operated by generational producers who are very suspicious of anything new, very suspicious of academic philosophy.there’s a real heavy resistance to you’re trying to make me change.so that’s what’s missing is, how do we get these older, more generational farms to not only put these practices into place, but sign off on them in one way or another in their communities?...the resources are there, the outreach is there. I don’t know what more the agencies could possibly do to try to get into good communication with producers. I think that has been done. The question is, how do we get producers more interested?

I know that Utah State University has a lot of trials. They do a lot of testing, it would be nice if we had access to their data and those resources. And maybe that’s out there and I just don’t know about it. It would be nice to know what’s available and what they’re finding and have access to that information. The consultation on our soil stuff, somebody that can come out and help us and say, we need to do this on our place, that would be excellent if you can call on somebody to do that. Personalized consultation I guess.

If there was something such as a kit, or if there was something that basically where the samples of my soil could be submitted and tested and somebody could try talking to me about what the condition of my soil is. I

get a bunch of labels and numbers but I don't know what it means [when getting the soil test results]....the same result all the time, "add more nitrogen" gets disappointing. I'd like to know what is wrong with my soil, what is good with my soil, and what should I be trying to preserve? I don't know what the health of my soil is, I know whether it produces.

I think the problem is for most of the data that is done, it's done on college farms, or farms that actually don't need to make a living. And so it's like, sure, you did that because you got a grant and it was fun to see that, but you didn't have to figure out how to make it work. It just seems like they're not super practical for people who are actually earning a living and having to make it work. So more peer-based things [are needed/wanted]. Like a farm that's actually doing it, trying to survive and making a living off of it and producing. Production, instead of a college that has five plants that's monitoring them every day and getting really great data....More peer-based is what needs to happen, like more hands-on, practical, peer-grade, peer-based learning....soil scientists are awesome, and they can tell you really cool things. But when you go to the farmer who's like doing it day-to-day, it's a totally different world than someone who's sitting in the lab, researching, studying.

Challenges to Operating a Farm/Ranch

We also include in this report challenges the farmer/rancher feels are the biggest to operating their farm or ranch today. We include these responses so the team understands what the producers in the project are having to contend with. These responses were often intermixed with numerous other challenges, as seen in the following quotes.

Financial issues/constraints were noted by eight of the producers as one of the biggest challenges, followed by lack of water/drought (noted by six of the producers).

Costs of everything, money. Trying to be able to break into it (as it wasn't passed down). Trying to expand or grow, cost prohibits a lot of things. You can't make enough return on livestock to make it. You just can't.

It all comes down to money. The biggest thing is that farming generally is just not very lucrative. You work harder for less than just about any other career path. There's no such thing as a work life balance. It's very difficult to bankroll your operation. Financing is hard. And at the end of the year we get one pay day, and it's not always very nice, it's not always great.

Water. It's the limiting factor on farming and if there's no water, you don't farm.

Water. And we're gonna get squeezed out here pretty quick....we grow good houses. Developments coming in are taking most of the water, in my opinion.

Scarcity of land, housing developments, scarcity of water, people not understanding water rights and ownership and wanting to take water from agriculture, market volatility. Pricing in the market is huge. Weather is huge this year with it being so hot. Food safety is a nightmare that I have to tackle every year. Just people not being aware of ag and, as development encroaches agriculture, then you got people who complain to cities and counties about what ag producers are doing. So lack of knowledge, lack of understanding. And labor, phew goodness, can't forget labor. Shortages of labor, immigration reform. And then just cost of material. So I don't know, in a nutshell that's most of them.

Summary

The interview data shows the participants are excited about the project, both for gaining knowledge on soil health, and in hopes of improving their farm/ranchland and its productivity. Beyond themselves and their land, they are also hopeful the project yields results that will be beneficial and shared with the larger agricultural community in Utah. As stated and asked by one:

I'm hoping that the end results of this study help the agricultural community and not just research [for] a university. Really puts it into play for the communities...so it'd be nice if other people could get access to the data when the project's done. And is that the plan?

The participants have tried various conservation practices but these practices are not without challenges for the producers, primarily the time involved with them, dissatisfaction with the results, and costs involved to implement the conservation practice.

A range of information resources are used for information on soil health by the producers. The various quotes show that it is hoped the team can build off of these, rather than re-invent the wheel. Farm field days and a mentoring program were desired the most in terms of resources needed, though some producers are concerned it will not be possible for them to attend given their land's perceived off the beaten path location in Utah.

What is very clear is that these participants do not feel there is information available on soil health and the information they have gained, they have searched out for themselves. They are well aware of the uniqueness of their land, and that soil health practices used in other parts of the country do not always work nor are necessarily a good idea in their geographical landscape.

Several producers also expressed a desire to have the project present the reality of soil health practices. This was previously seen in the quote regarding the USHP (Utah Soil Health Partnership) conference, and is seen below as well:

I think it's important that at some point the soil health organizations and government that are doing outreach to farmers, make it a little more realistic. I think that we paint soil health and alternative farming practices with a pretty rosy brush. And it's difficult and it takes a long time. And it's expensive. And I think if we approached it from a more realistic standpoint, which would be to say, yeah, it's going to be hard, it's going to cost money, and it's going to take a long time. But it's worth it. That you'd get more people involved.

There appears to be great potential for these individuals to be seen as innovators on soil health practices in their communities, indeed, some perhaps already are. As one participant told us,

We have some small landowners actually adopting the practices [they see us using for soil health]. We don't have any production people adopting any of the practices at all, but they're definitely coming around and asking, "How did you do that?" Because when we do have success, it's a big success. When we get a crop to work out the way we want it to, it's dramatic.

Given the great need seen for soil health leaders in the local communities, and the desire by the participants that the project benefit the larger agricultural community, it is hoped this will be a major outcome of the project.

Appendix

Table 1. Operator Characteristics*		
	Mean	Range
Age	47	32-70
	Frequency	
Gender		
Male	10	
Female	3	
Race		
White	13	
Education		
High School	3	
Some college	2	
Bachelor's degree	3	
Some Graduate work	2	
Master's degree	3	
Full or part time producer		
Full-time	7	
Part-time	5	
Partner with others to farm/ranch? **		
Yes	9	
No	3	
*Some responses are missing, thus may not always equal 13		
** This question was interpreted in multiple ways (e.g. business partner, family members and friends helping out, etc.) Those listed as partners include: Parents, spouse, friend, siblings, sharecropper, employee, and in-laws.		

Table 2. Farm/Ranch Characteristics*		
	Mean	Range
Acres	480	2-2500
	Frequency	
Own Livestock **		
Yes	11	
No	2	
Multigenerational		
Yes	7	
No	6	
Tenure		
Own all acres	4	
Own + rent acres	6	
Do not own any acres	2	
*Some responses are missing, thus may not always equal 13		
** Livestock included milk cows, cow-calf pairs, Spanish and Kiko goats, commercial sheep, layers, miniature Herefords, Breeding trio pigs, Black Angus, Cross-Breed, horses, Rambouillet ewes, beef master cattle, Nigerian goats, miniature Herefords and Angus (Aberdeen), Angus Gelbvieh cross and Angus Simmental cross.		

Table 3. Conservation practices have used/currently use*	
	Frequency indicating use
Cover crops	7
No-till/reduced tillage	9
Soil Health Testing**	9
Rotational/sustainable grazing	6
Use or have used cost-share for conservation practices	5
*Some responses are missing, thus may not always equal 13	
** There was confusion on this question, as participants took this to mean “soil testing” rather than “soil health testing.”	

Table 4. Sources use(d) for information about soil health*	
	Frequency indicating attendance
Attendance at Utah Soil Health Partnership (USHP) in past 5 years**	4
Utah State University (USU) and USU Extension	6
YouTube	5
NRCS	4
Gabe Brown	3
Internet	3
Greg Judy	2
Facebook	2
Other farmers/ranchers	2
Conservation District	2
Farm Journals	1
FSA	1
IFA	1
Instagram	1
Podcasts	1
Elaine Inghram	1
Alan Williams	1
UDAF (Utah Department of Agriculture and Food)	1
Allan Savory	1
USHP	1
*Some responses are missing, thus may not always equal 13	
** Not all producers are aware of USHP	