Growing for the future: Business lessons from ag retail's conservation leaders

How innovators are successfully embracing conservation, stewardship and resilience for greater impact.

A report developed by Trust In Food,
a Farm Journal Initiative in collaboration
with Environmental Defense Fund

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Finding the ways that work

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About this report

This report represents an analysis of primary research highlighting ways in which innovative ag retail companies are successfully integrating products and services related to conservation agriculture and the sustainability of agriculture into their business portfolios. The study demonstrates the positive ripple effect—actual and anticipated—that this integration can have on a retail organization's bottom line, on the success of its grower-customers, and on the environment. Additionally, this report seeks to galvanize the ag retail sector and its partners around a set of actionable steps that can help scale adoption of sustainability-related products and services within the ag retail business sector. This in turn would support greater levels of on-farm conservation and sustainability-related practice adoption.

The findings contained here are not representative of the entire ag retail industry, rather they illustrate the cutting edge. Continued collaboration and innovation are needed among retailers and their suppliers, in the U.S. and globally, to continue to improve outcomes related to water quality, water use efficiency, soil health, soil erosion, wildlife habitat and biodiversity.[1]

This report presents a clear business case for ag retailers, exploring how they can dramatically transform their businesses to meet the needs of their grower-customers, the broader agri-food value chain, their local communities, and the natural resources the world depends upon. It is built on in-depth interview and anonymous survey data collected from 82 innovative U.S. ag retailers, crop consultants, and agronomists representing the leading edge of agricultural sustainability. Collectively, these professionals service each of the USDA Economic Research Service's nine Farm Resource Regions[2] and represent over $1.7 billion[3] in annual revenue.

Developed through a collaboration between Trust In Food, a Farm Journal initiative and Environmental Defense Fund (EDF), the study builds on historical research EDF has generated through its EDF+Business and Sustainable Agriculture programming focused on the agricultural supply chain.

The views and analysis presented here are those of the individuals and do not reflect the position of any ag retail organization, Farm Journal, Trust In Food, EDF, or any organization with whom they partner or receive funding from.

Report bias and limitations

Primary research undertaken for this report included in-depth interviews and an anonymous online survey. Both the interview script and the online survey instrument were co-created by Trust In Food and EDF researchers. Criteria used to select and recruit interview participants were designed to ensure a diverse sample population as reflected in geographic distribution, the size and scale of the retail organizations, years of industry service, and gender. Because the report explores the conservation agriculture and sustainability-related business model of innovative ag retail leaders, it only features insights from those with a documented business portfolio including such activities. Respondents volunteered to be interviewed or to answer the online survey via an email link, creating a self-selecting natural bias in the sample toward retailers who are actively engaged in conservation agriculture and sustainability. Neither the data from the interviews nor the online survey has been weighted or balanced and should not be taken as representative of the entire ag retailer population.

UNITED SOYBEAN BOARD

Foreword

Growers in the United States face a rapidly changing business landscape. The economic, environmental, and social challenges experienced today range from the impacts of severe weather events to volatile commodity markets. Despite these challenges, U.S. growers play a critical role in the stewardship of the soil, water, and air through sustainable management systems. Agricultural retail professionals and Certified Crop Advisers (CCAs) are widely recognized as growers' trusted advisers and are often involved in sustainability-related decision making on farms. This publication conveys the transformation that is taking place in agricultural retail firms as sustainability becomes an everyday component for growers.

This report features retail organizations, a few who are members of The Fertilizer Institute (TFI) whose journey, can be used as a roadmap for other ag retailers on how to add sustainability programs to their work with growers. Diversity of crops, soil types and climactic zones mean that no two retailers are alike. Still, similarities highlighted in these stories of sustainable business solutions demonstrate that common themes are at play. From a willingness to learn and innovate to the eagerness to dedicate capital and scientific expertise to building a service-driven organization, leaders in agricultural retail are advancing sustainability.

"The agricultural retail leaders interviewed for this report all recognize the need to balance the economics of their growers with the environmental benefits of the practices recommended."

The agricultural retail leaders interviewed for this report all recognize the need to balance the economics of their growers with the environmental benefits of the practices recommended. The fertilizer industry is committed to the 4R Nutrient Stewardship principles (selecting the right source of fertilizer, applied at the right rate, at the right time, and in the right place), which is key to achieving this balance. When paired with conservation practices, the 4Rs are key to the success of sustainable management systems.

Examining this issue through the perspective of retailers who are striving to make sustainability a cornerstone of their agricultural business is a critical part of the conversation. We appreciate Trust In Food, a Farm Journal Initiative and the Environmental Defense Fund's willingness to explore this topic, which is critical to the future of sustainable food production.

Sally Flis, Ph.D., CCA
Senior Director of Agronomy
The Fertilizer Institute

Terminology

There is no singular definition of sustainability across the U.S. agricultural value chain. For the purposes of this report, readers are encouraged to reference the terminology list below and apply these definitions throughout the text.

- **Ag retail**
  Any business that serves growers raising agricultural crops with products and services involving but not limited to seed, fertilizer, precision technology, agronomy, and conservation agriculture.

- **Agronomy**
  The all-inclusive science of agricultural crop production.

- **Conservation Agriculture**
  A farming system that promotes maintenance of a permanent soil cover, minimum soil disturbance, and diversification of plant species. It enhances biodiversity and natural biological processes above and below the ground surface. This contributes to increased water and nutrient use efficiency and to improved crop production.

- **Co-Op**
  Used as an abbreviation for “Cooperative,” an ag retail business that is employee- or customer-owned.

- **Grower**
  A farmer or other agricultural producer who plants, grows and harvests crops.

- **Resilience**
  The ability of a system of any type or size to resist, absorb, accommodate, and recover from the effects of hazards in a timely and efficient way.

- **Stewardship**
  The responsible management of, and interaction with, natural resources and ecosystems.

- **Sustainability**
  General
  Meeting the needs of the present while improving the ability of future generations to meet their own needs by:
  - Increasing productivity to meet future food and fiber demands
  - Improving the environment

- Improving human health
- Improving the social and economic well-being of agricultural communities

Agricultural

Any conservation agriculture practice or activity, and all needed products or services, including but not limited to:

- Ability to improve the profitability of farming
- Nutrient efficiency activities that maintain or increase crop yields while minimizing or preventing nutrient and sediment loss from fields into watersheds and the broader local environment; and
- Natural resource efficiency activities that protect and conserve natural resources, such as improved water use efficiency with irrigation technology, enhanced water quality with forested riparian buffers, more abundant wildlife habitat with pollinator plantings, etc.

Executive summary

More so than almost any other stakeholder, ag retailers are positioned to play an influential role in the continuous improvement of sustainability across the agricultural value chain.

This report highlights the ways innovative retailers are positioning their businesses around the hub of conservation agriculture and serving as change agents. It seeks to galvanize the industry by highlighting some of the key benefits of conservation agriculture portfolios to retail businesses, growers and the environment. The analysis and commentary presented here are based on in-depth interviews with leading ag retail professionals and on responses to an anonymous online survey of ag retailers highlighting conservation agriculture trends in the industry.

The nine interviewees have over 160 years of combined experience and represent organizations that serve millions of U.S. farm acres across nearly every USDA Economic Research Service region. Their retail businesses represent collective revenue of more than $1.7 billion[3]. Additional insights came from 73 anonymous retailers who completed the online survey and collectively represent each of the nine USDA regions (Figure 1). Their invaluable experiences, insights and expertise provide a candid look into the on-the-ground realities of the relationship among ag retailers, growers, the natural resources required for agricultural production, and the broader agricultural sector.

The key findings of this report stem from common themes that emerged involving market forces, opportunities, challenges, trends and drivers, and motivations. Leading ag retailers report that retail businesses can successfully increase their conservation agriculture products and services by:

- Creating reputational leadership through conservation agriculture solutions
- Improving impact through data and emerging technology
- Unlocking capital through partnerships and collaboration
- Developing a triple bottom line approach through the diversification of products and services

Yet several obstacles can hamper retailers' efforts to scale conservation agriculture among their grower-customers. Two major steps retailers must take to adequately advise growers on increased adoption of conservation agriculture practices are:

- Cutting through the confusion of various standards and definitions
- Meeting grower needs through innovative staffing models and training solutions

More so than almost any other stakeholder, ag retailers are positioned to play an influential role in the continuous improvement of sustainability across the agricultural value chain. This report serves to celebrate what is working and to highlight ways the entire ag retail industry can lean in to increase adoption of conservation agricultural products and practices. The time for proactively seeking out ways to improve the reputation and impact of the agricultural sector is now.

Introduction

The agricultural retail industry provides growers with many of the products, services and agronomic advice necessary for crop production across all U.S. geographies and farm sizes. Ag retailers and Certified Crop Advisors (CCAs) are a ubiquitous source of information related to agricultural production and agronomy. Many growers rely on a single ag retail company or co-op for much of their production input and agronomic recommendation needs. This places the ag retail sector in a position of heightened responsibility and grants it a unique opportunity to influence agricultural production methods in a way and at a scale few other stakeholders can.

In the U.S., households spend roughly 6% of their income on food purchases —the lowest of any nation. The country is the world's largest food exporter. It shipped nearly $140 billion in agricultural products outside its borders in 2018. Total U.S. farm productivity increased 178% between 1948 and 2015, while total land used for agricultural production fell 24%, according to USDA. This bounty is due in large part to the advent of a modern agricultural system developed through mechanization, biotechnology, and crop nutrient management and protection solutions.

Yet these accomplishments come with unintended consequences. Each summer, nutrient runoff and erosion from farm fields draining into the Mississippi River Basin contribute to the creation of a hypoxic dead zone in the Gulf of Mexico. The dead zone spans nearly 8,000 square miles, cutting off oxygen to marine life and endangering local economies that depend on the Gulf. This same runoff leads large urban centers and municipalities throughout the U.S. to incur considerable cost to treat drinking water downstream of agricultural

land to federal standards. The effects of agricultural production on biodiversity and habitat loss are becoming increasingly understood as pollinator populations decline in some areas.

Scientific data show an important key to reducing agriculture's negative environmental impact and preventing unintended environmental outcomes is the adoption of more sustainable agricultural production practices, collectively known as conservation agriculture. Research has demonstrated that adoption of certain conservation agriculture practices can improve environmental outcomes. Many innovative farmers and their advisers have adopted such practices, yet adoption rates remain low and inconsistent across U.S. farmland.

Several complex and compounding issues hamper adoption and maintenance of conservation systems. Although technology has placed abundant agronomic and environmental information at the fingertips of growers, much of it is conflicting, some of it is motivated by corporate interests, and too often it is scientifically discordant. Research suggests growers' perceptions of risks inform their conservation adoption decisions. Other data on the uptake of precision ag technology—a subset of the conservation agriculture toolbox—point to economic and technical factors that can create a lag barrier. These factors are compounded by the historically low profit margins, unstable commodity markets, and increasingly disruptive weather patterns growers face.

To scale conservation agriculture practices on farms amid such an operating environment, growers will require increasing access to informed professionals who provide the education, training and technical support services required.

Despite low on-farm adoption rates, the scientific case for a more sustainable agricultural value chain is building. Simultaneously, there is increasing awareness and interest in the unintended consequences of agricultural production among the public and supply chains, both of whom increasingly demand sustainably produced agricultural products. That pressure is only expected to increase, further amplifying the need for growers to decode and respond to those sustainability demands.

To scale conservation agriculture practices on farms amid such an operating environment, growers will require increasing access to informed professionals who provide the education, training and technical support services required. These advisors will provide relevant recommendations and clarity about how the latest research, technology and demand trends can be applied to a farm's specific operational needs to improve the operation's environmental, social and business outcomes. Ag retailers can provide that valuable advice because they play a consistent and central role in the farmer's group of advisors. Some retail companies have already stepped up to play their parts.

This report highlights the ways many innovative retailers are positioning their businesses around the hub of conservation agriculture and serving as change agents. It seeks to galvanize the industry around the benefits of such a portfolio to business, the environment and growers.

Growing conservation: Key findings from ag retail leaders

USDA / NRCS — PUBLIC DOMAIN

"I would say that precision ag has gotten more precise. So we're selling products now by the ounce that we used to sell by the gallon, and we're applying them in very small doses.

— Anne Cook,
The Andersons Inc.

More so than almost any other stakeholder, the ag retail industry is positioned to play a critically powerful role in the continuous improvement of the agricultural value chain's sustainability. This report highlights the way many already are. It presents a suite of strategies and tactics the retail sector can learn from and replicate to empower their growers and drive positive environmental outcomes – all while building a more resilient ag retail business.

Perhaps most importantly however, it demonstrates the many ways in which the ag retail industry can serve as a change agent by driving the adoption of more sustainable on-farm practices in ways no other stakeholder can. Notably, serving in this role does not come at a cost to the retailer, rather, it can provide business gains to the retailer.

The opportunity before the broader ag retail community is to take up the mantle of these retail innovators and apply their learnings to scale conservation agriculture adoption in a way that has positive, measurable, and lasting outcomes for farms, retailers and the environment.

The opportunities

Four main opportunities surfaced during this research that can help ag retailers increase their conservation agriculture products and services:

Creating reputational leadership through conservation agriculture solutions

Innovative retailers report experiencing a positive reputational halo effect from offering conservation-related products and services. In addition to the inherent improvements it provides regarding grower-customer business demand and relationships, those retailers believe it creates a level of peer pressure on other retail businesses to 'keep up with conservation to keep up with the competition'.

Improving impact through data and emerging technology

Emerging technology solutions are reshaping the way agricultural production is managed, by growers and retailers alike. These solutions create a level of visibility and precision control unlike anything in the history of agronomy. Innovative retailers are deploying these solutions to both improve their grower's efficiency and reduce their negative environmental impacts, but also to effectively build the case to their grower-customers for management changes based on never-before-seen farm data.

Unlocking capital through partnerships and collaboration

Bridge-building between growers and conservation organizations and agencies is an important role many innovative retailers play. By working to remove barriers to conservation practice adoption, such as access to capital and credit, retailers position and prime their grower-customers to adopt more conservation practices.

Developing a triple bottom line approach through the diversification of products and services

A business portfolio that extends beyond crop inputs and application is a hallmark of innovative ag retailers. Diversified portfolios might reflect increasing interest in a triple bottom line approach to operating across many ag retail businesses. This approach leads to a 'conservation-first' mindset with the grower-customer relationship, rather than a 'sales-first' mindset.

The obstacles

Several obstacles were identified through the research which hamper retailers' efforts to scale conservation agriculture among their grower-customers. Addressing these is key to scaling conservation agriculture:

Cutting through the confusion
A staggering amount of conservation agriculture research and science is available today, yet much of it is contradictory, inconclusive and not locally-relevant. There are a variety of frameworks for measuring conservation agriculture and sustainability, rather than a single unifying standard. Retailers and growers alike need a unified, measurable and locally-relevant framework of benchmarks to work from in order to effectively adopt conservation practices.

Meeting grower needs
Conservation agriculture recommendations typically require an increased time investment from ag retailers to support and deliver. Extra time is spent meeting with grower-customers to develop solutions down to the sub-field level, working on farm operating plans, and training to remain current on the science, products and services of conservation agriculture. As conservation agriculture spreads among their grower-customers, retailers often are unable to consult with as many growers as they did 10 years ago due to time constraints. Retailers must develop innovative staffing models and solutions in order to expand conservation offerings.

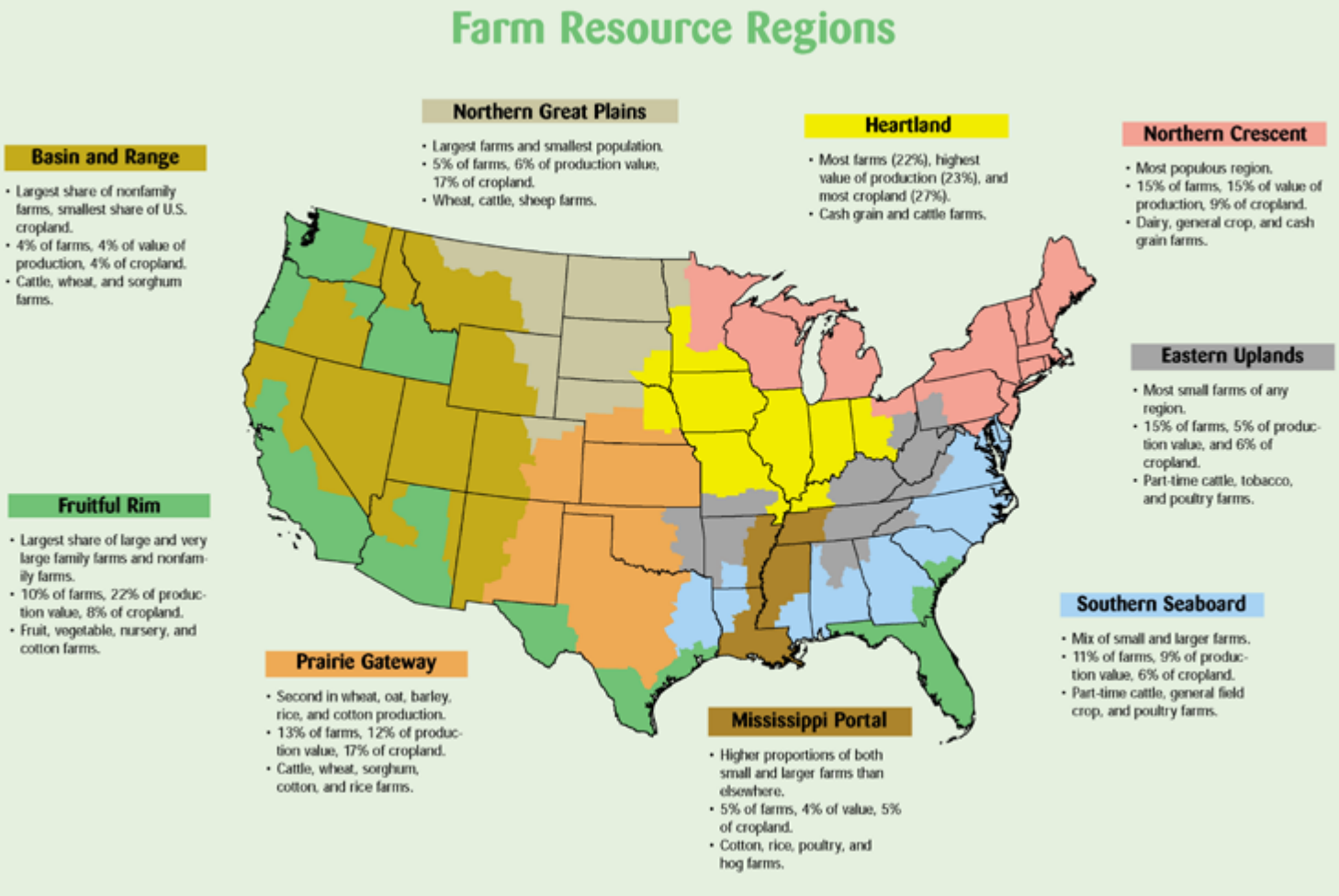
Research overview

Two primary data collection tactics informed this study: an online quantitative survey and a series of phone-based interviews. The following is a snapshot of the respondents in each respective group.

Profile: Online quantitative survey respondents

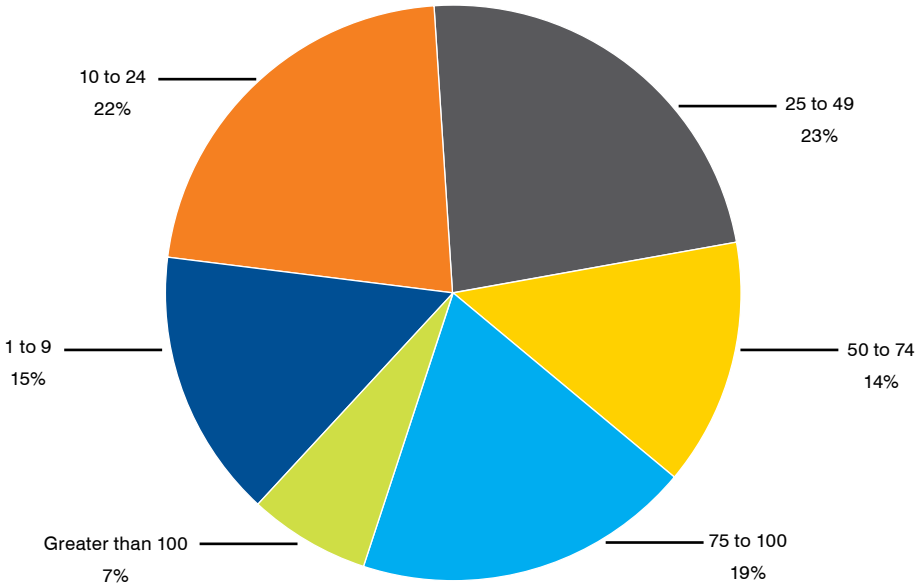
- 33 questions
- 73 respondents
- Titles included sales representatives, nutrient specialists, agronomists, crop advisors, seed managers, precision agricultural specialists, store owners and managers
- 4+ respondents from each of USDA's 9 Farm Resource Regions

Figure 1: Economic research service's farm resource regions



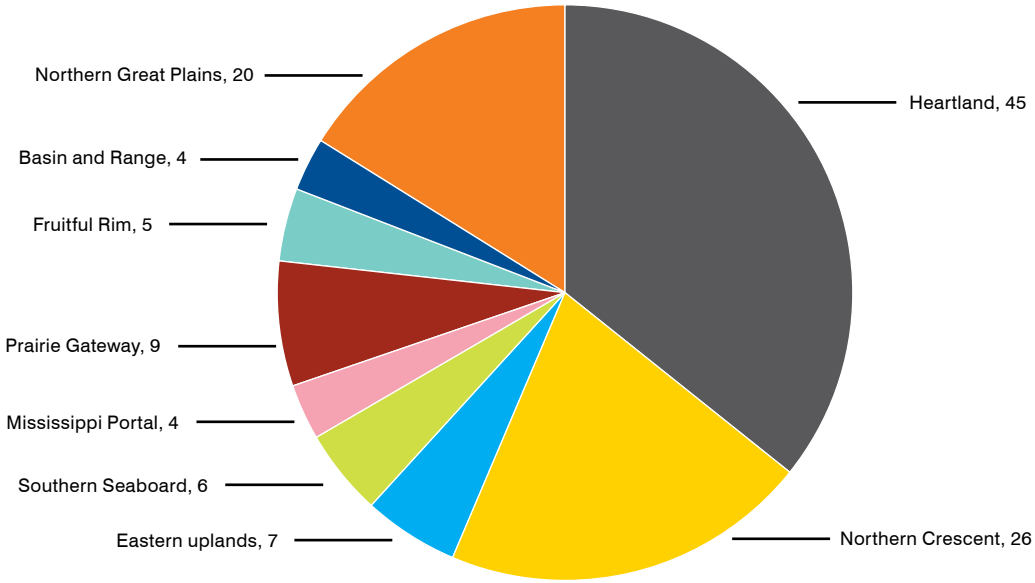
Source: USDA Economic Reasearch service

Figure 2: Farmers personally served by advisor



Source: DOANE Advisory Service

Figure 3: Respondents geographical region



Source: DOANE Advisory Service and USDA's ERS

Profile: Interview respondents

Ben Hushon,
Partner, The Mill

- Years in the Industry: 30
- Ag Retail Business Name: The Mill
- Geography Served: 6 counties across northern Maryland and southern Pennsylvania
- USDA Farm Resources Region: Southern Seaboard
- Growers Served: ~500
- Annual Revenue (company-wide): <$25 million
- Crop Mix Served: Barley, corn, hay (grass and alfalfa), soybeans and wheat

"The way I define sustain or sustainability, it's about optimizing the nutrient use efficiency, leading to improved yields, while reducing your environmental impact, and I believe we have many farmers in our area doing many of these things but there is so much room for improvement and increased profitability."

Cammie Vaupel,
Conservation Agronomy Specialist, Great Bend Cooperative

- Years in the Industry: 12
- Ag Retail Business Name: Great Bend Co-op
- Geography Served: 10 counties in central Kansas
- USDA Farm Resources Region: Prairie Gateway
- Growers Served: 500+
- Annual Revenue (company-wide): $26-$50 million
- Crop Mix Served: Alfalfa, corn, cotton, milo, soybeans and wheat

"Our focus on sustainability basically comes from understanding that we're only here because of our customer-owners. And without them, we don't have a business. Introducing and implementing sustainable practices for our owners/customers is just one of the many services we provide to help extend the life of their farms for generations to come."

Ashley Schmeling,
Precision Ag Territory Lead, Central Farm Service

- Years in the Industry: 9
- Ag Retail Business Name: Central Farm Service

- Geography Served: Southern Minnesota
- USDA Farm Resources Region: Heartland and Northern Crescent
- Growers Served: ~500 producers and ~800,000 acres
- Annual Revenue (company-wide): $101-200 million
- Crop Mix Served: Corn, peas, soybeans, sweet corn and wheat

"That's how we turn all that data into actual results and possibility for the grower [sic]. They can go to their landlords, or go home and have their farm meetings, and say, "This is where we're at," but also on the environmental side, of saying, "We've got four years of data now. This area is never working for us. We've had dry years, we've had wet years, and this area is always costing us more money. What can we do different here? What's a better option?"

Terry Tindall,
Director of Agronomy, Simplot Grower Solutions

- Years in the Industry: 30+
- Ag Retail Business Name: Simplot Grower Solutions
- Geography Served: Retail stores across northern California, Idaho, Minnesota, North Dakota, South Dakota, Oregon and Washington. Select services across California, Colorado, Idaho, Kansas, Minnesota, Montana, Nebraska, Nevada, North Dakota, South Dakota, Oregon, Texas, Washington, and Wyoming, and internationally.
- USDA Farm Resources Region: Entire U.S.
- Growers Served: Several million acres served across service region
- Annual Revenue (company-wide): $1-billion-plus
- Crop Mix Served: Canola (Canada), corn, cotton, high-value fruits and vegetables, palm oil (Colombia and Southeast Asia), potatoes and wheat

"We find that when we balance it [the suitability of a practice] with local growers and their crop advisors, there's a benefit to overall production and we can, perhaps in some cases, reduce the total amount of nutrients that are applied, or increase the productivity with the same amount of nutrients. We can improve nutrient use efficiency."

Mark Aldax,
Branch Manager, Mid Valley Agricultural Services Inc.

- Years in the Industry: 8
- Ag Retail Business Name: Mid Valley Agricultural Services Inc.
- Geography Served: 7 offices in the Central Valley region of California
- USDA Farm Resources Region: Basin and Range, and Fruitful Rim
- Growers Served: 100,000-300,000 acres served
- Annual Revenue (company-wide): $101-$200 million
- Crop Mix Served: Alfalfa, almonds, cherries, corn, grapes, vegetables,

walnuts and winter grains

"They're [growers] already doing that [incorporating sustainable practices], whether they call it sustainable or not, they are [sic]. And so, I think there is that recognition that the crop our growers are producing is produced in such a way that is healthy and beneficial."

Anne Cook,
Environmental Health and Safety Manager, The Andersons Inc.

- Years in the Industry: 30
- Ag Retail Business Name: The Andersons Inc.
- Geography Served: Indiana, Michigan, Ohio and into Canada in the Lake Erie Basin
- USDA Farm Resources Region: Eastern Uplands, Heartland, and Northern Crescent
- Growers Served: 750,000 acres
- Annual Revenue (company-wide): $101-$200 million
- Crop Mix Served: Corn, soybeans, wheat and specialty crops

"We have a lot of commodity companies that we serve. So, whether it's the tomato paste manufacturer that is getting tomatoes from our growers and our customers, they want to know that those tomatoes are grown with sustainable practices. So, having that traceability right from the time the seed is planted in the ground to the time that the tomato is delivered to the plant, is really critical, having that cradle-to-grave approach on sustainability."

Tim Mundorf,
Nutrient Management Lead, Central Valley Ag

- Years in the Industry: 13
- Ag Retail Business Name: Central Valley Ag
- Geography Served: Northwestern Iowa, northeastern Kansas and eastern Nebraska
- USDA Farm Resources Region: Northern Great Plains and Prairie Gateway
- Growers Served: Multiple hundred-thousand acres served
- Annual Revenue (company-wide): $1 billion
- Crop Mix Served: Corn, soybeans, wheat and specialty crops

"You know when you talk about sustainability, it encompasses a lot of things. Profitability, of course. They need to make money or they're not going to stay around. Limiting inputs and, especially, being efficient with the inputs provided to make sure every input provided adds benefit and stays on their farm and doesn't leave. Our thought on sustainability is that we help them keep the soil on their farm."

Brian Madigan,
Agronomy Sales Manager, Country Visions Cooperative

- Years in the Industry: 26
- Ag Retail Business Name: Country Visions Cooperative
- Geography Served: 13 counties across eastern Wisconsin
- USDA Farm Resources Region: Northern Crescent
- Growers Served: 100,000-300,000 acres served
- Annual Revenue (company-wide): $66-100 million
- Crop Mix Served: Alfalfa, beets, corn, lima beans, green beans, peas, soybeans, sweet corn and wheat

"We've got forest councils in each county. We've got the land and water conservation. We've got the extension offices. We've had some common meetings with equipment dealerships. They'll write us [about sustainability issues], and we'll invite them out when we have field days and demo days. We try to share that [sustainability] information back and forth."

Cat Salois, Director of Research,
The McGregor Company

- Years in the Industry: 14
- Ag Retail Business Name: The McGregor Company
- Geography Served: 2.25 million acres across the Pacific Northwest, including northern Idaho, northeastern Oregon and Washington
- USDA Farm Resources Region: Basin and Range, Fruitful Rim
- Growers Served: 2.25 million acres served
- Annual Revenue (company-wide): $101-200 million
- Crop Mix Served: Barley, chickpeas, canola, lentils, seed corn, seed production, silage, spring peas, vegetables (150+ varieties) and wheat (spring and winter)

"We want to be that trusted advisor on the farm, and we want to be the go-to advisor in the region. It is about obviously profitability, but also how we can do more with less, how we can ensure the health of the farm ground, and how that farm is persisting from year to year. If we can help our growers get that edge, and our advice helps get them there, that is a huge part of what McGregor is about."

The opportunities

USDA / NRCS—PUBLIC DOMAIN

Creating reputational leadership through conservation agriculture solutions

Ag retail organizations that empower growers to steward their businesses and improve their farm's environmental footprint are raising their profile, credibility and reputation. Innovative retailers report that in many cases, supporting conservation agriculture-related issues among their growers has positioned the retailer as a leader in sustainability issues within the regional community. The increasing social normalcy of sustainability and traceability among the general public and the value chain lends further credibility to these retailers.

"That's the big point going forward: We're going to have to have traceability of crops that go back to sustainable practices, or food suppliers are not going to buy them."

—Tim Mundorf, Central Valley Ag

One example is the positive impact on the reputation and bottom line of Great Bend Co-Op in Kansas. Conservation Agronomy Specialist Cammie Vaupel explains, "As far as our organization, partnering with Land O'Lakes SUSTAIN and also creating a whole role around conservation is not very common for local cooperatives. So that's drawn some attention. I think that people are seeing that we are trying to help our customers get the best return on investment, while also looking to the future. When you consider the ag world overall, there is so much negativity and bad publicity. The public is listening to so-called experts, people who don't have a clue what we're actually doing out here. So just trying to clarify that we and our producers are willingly doing these things to make everything better environmentally... that's huge."

Ag retailers should explore collaboration with other organizations that focus on conservation agriculture to develop communication tools and financial resources to empower growers, whether customers are new to the concept or already are engaged in conservation agriculture. For example, many innovative retailers host field days centered around sustainability issues that provide education and training for the entire local agricultural community, not just that retailers customers[24]. Some retailers are serving as technical advisors and ambassadors for conservation agriculture with local media outlets[25]. Both tactics can boost grower engagement in sustainable practices and create a groundswell of support for conservation agriculture in the local community.

Although field days represent a significant expense for The Mill, an ag retail organization serving growers in Maryland and Pennsylvania, Ben Hushon—a

partner in the company—is convinced they are worthwhile. Hushon reports the events help The Mill build and strengthen its reputation as a sustainability leader, with growers coming from miles around to attend – many of whom farm outside The Mill's territory. According to Hushon, the events and The Mill's sustainability-leader reputation spurs growers from outside The Mill's territory to go back to their local ag retailers, many of which are direct competitors of The Mill, and request different, conservation-focused agronomic solutions. This represents a win, even if The Mill doesn't make the final sale, Hushon says. When others in the ag sector ask how the company keeps farmers returning to the field day, he tells them: "It's not about the food. It's about the education, and they keep coming back because we keep the education fresh."

Such activities also enable innovative retailers to educate critical stakeholder groups that might otherwise be overlooked, such as lenders and financial institutions. Cat Salois is Director of Research with The McGregor Company, which serves the Pacific Northwest. She states, "We actually encourage our customers to bring their loan providers to some of our tours out on the research farm during the summer, and we have winter meetings where we really recap a lot of that data. We encourage the customers to bring their lenders to those events." Salois continues, "We probably have 12 to 15 tours, and I bet I had at least one lender in every single one." Educating lenders and financial institutions on conservation agriculture enables growers to face reduced barriers to accessing additional lines of credit or other funding from institutions – capital without which practice change and adoption could not occur.

Ag retailers can demonstrate leadership not only through educational events but also through a proactive approach that helps growers adopt conservation systems to mitigate the risk of uninvited regulation. The possibility of new environmental rules that could restrict agricultural production practices remains salient across U.S. farm country. Attention to environmental and sustainability issues among policymakers, consumer media and the general public is high. The spotlight on agriculture is expected to grow amid high-profile scientific data pointing to agriculture's impact on shared natural resources, such as the Dead Zone in the Gulf of Mexico and algae blooms in western Lake Erie.

"If we in ag, the farmer and the ag retail, don't start taking the environment [issues] seriously, there will be new regulations sent our way quickly," explains Hushon of The Mill. "[Sustainability] is the difference between whether farmers are going to be allowed to manage and farm their farms the way they want to, versus a state or federal office placing a bunch of mandates on them." He continues, "The industry is so focused on selling tons that we don't take the time to realize if we don't start managing those tons [better], stop being afraid that we're going to sell less fertilizer, then we're going to have regulations that we can't even comprehend. We've got to lead the farmers through this process instead of waiting until the state passes a law."

"[Sustainability] is the difference between whether farmers are going to be allowed to manage and farm their farms the way they want to, versus a state or federal office placing a bunch of mandates on them."

—Ben Hushon, The Mill

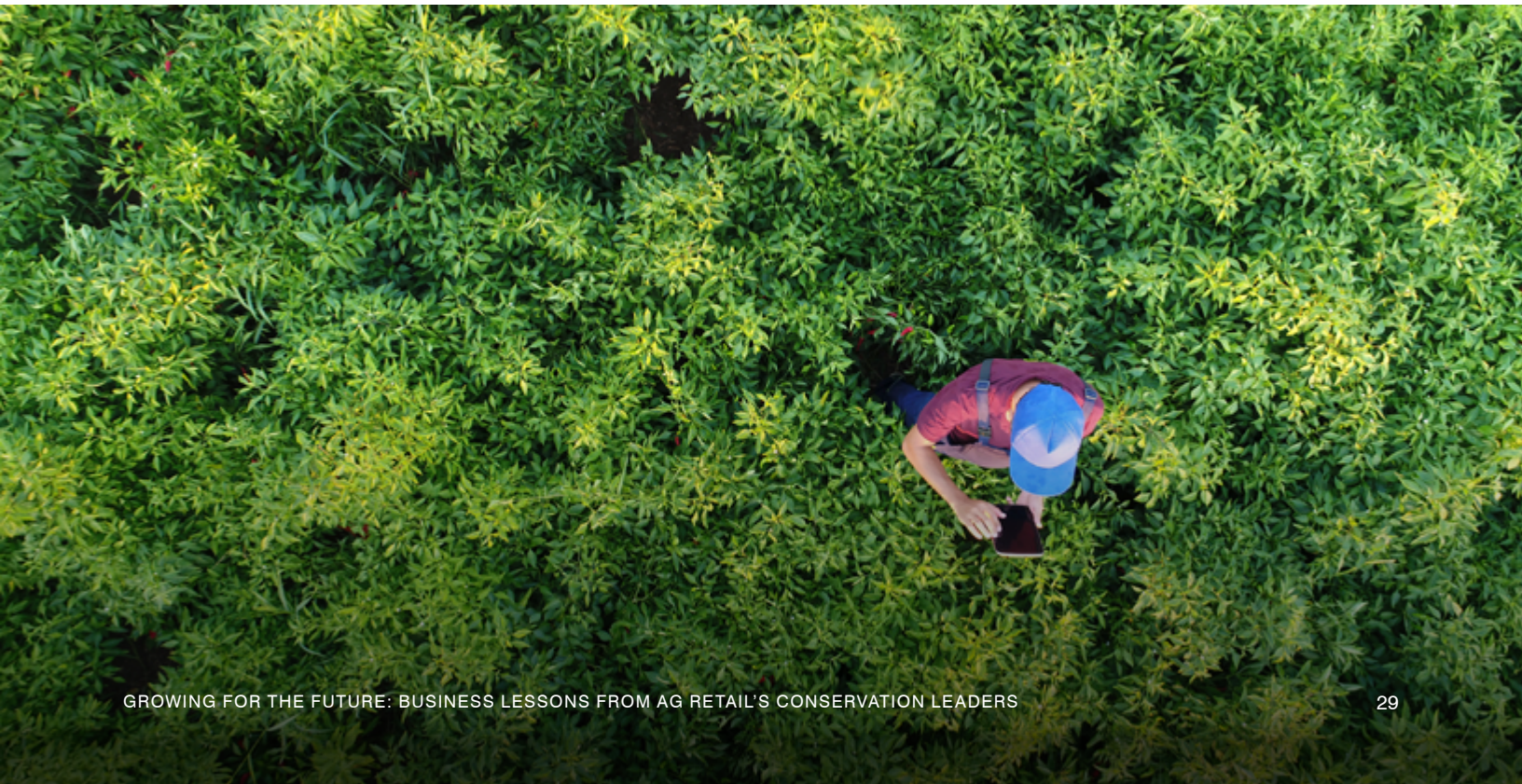
This growing public attention and concern can serve as an effective motivator for growers to proactively adopt on-farm conservation practices to prevent potentially disruptive regulation or litigation, according to leading ag retailers surveyed for this report[26]. Ag retailers can find common ground with growers by focusing on the importance of maintaining a social license to operate for agriculture. This aligns with the personal values of many growers including independence, innovation through technology, verification of on-farm stewardship, and aversion to regulatory overreach.

In her nine years in the ag retail industry, Ashley Schmeling has seen major changes, one of which is public opinion about agriculture."There's definitely the pressure that's come on from the public that I don't think we would've really anticipated nine, 10 years ago. The labeling and the sourcing, and what all that actually means, is still a mystery [to] a lot of people. I don't think we saw that exactly coming. That's been a definite trigger for different practices or different levels of transparency needing to come out from our growers, and our data, and ourselves as ag retailers. Because I think ag retail, in the whole scope of all this public pressure, has probably gotten just as bad of a black eye as the farmers maybe have, too, because we're the ones that supply those supposedly terrible chemicals and are putting that 'excessive' amount of fertilizer out there. Of course, we're the bad guys, too. It's been important for us to change and react appropriately to those kinds of

pressures, as well."

Not all media attention is negative, though. For example, Schmeling and others note local news organizations have covered some conservation partnerships and activities. After growers learn about the activities on the 6 p.m. news, they come to the office the next day asking for more information and inquiring about whether they may qualify for specific conservation programs. In addition, the local community sees the importance the retailer is placing on the local ecosystem, associating the retailers' brand with a positive leadership role.

Ag retailers should study consumer media, follow news updates from local Cooperative Extension, and seek out other resources explaining how communities across the U.S. are responding to the real or perceived impact of agriculture on neighboring waterways and other natural resources. This information can help retail businesses work with growers to evaluate and proactively incorporate sustainable production practices. As conservation systems are adopted, retailers and growers can work together to measure their economic and environmental benefits. In turn, growers can use that documentation of stewardship practices to educate non-operating landowners, lenders and other stakeholders—some of whom might share in the costs and opportunities of sustainable farming systems. NRCS[27], NGOs and others offer financial incentives, technical assistance and more, and innovative retailers who learn these resources can add record-keeping and advisory services to their portfolio to help growers navigate the transition to conservation agriculture systems.



Improving impact through data and emerging technology

"Instead of just saying this 500-acre farm has that potential, now we can start taking it down to smaller and smaller chunks of the world, to really understand should we be putting an underside across this entire acre."

— Cat Salois, The McGregor Company

Another approach leaders in ag retail are taking to expand their organization's conservation agriculture portfolio is through the use of emerging data and technology solutions. These solutions enable retailers to deeply understand sub-field level management practice performance, opening the door to a greater ability to customize conservation solutions. With this increased visibility, retailers can demonstrate to growers how their own crops and fields have performed over past seasons. By comparing yield data, soil samples, tissue samples, moisture levels, flow path data, nutrient application data, and more, retailers are able to identify problematic areas and then recommend conservation agriculture-related solutions.

Central Farm Service's Schmeling describes how her retail organization uses data to initiate discussions about conservation agriculture with its customers. "(With) Central Advantage, our Central Farm Service precision program, we have always presented to our growers the importance of nutrient management," Schmeling says. "That's a space that our sellers and our agronomists, can influence a grower. We can take the soil samples, we can get the results, we can make management zones, we can influence fertility on different pieces of that farm with what makes sense as far as productivity. The reason we've gone the route of sustainability—and we talk about it more in the nutrient management/soil health sense than anything else—is because that's a place that we can still directly influence."

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She continues: “Central Advantage is a Central Farm Service (CFS) program, but you don’t have to buy a single seed, a single pound of fertilizer from CFS to get Central Advantage. We will work with anybody.” This separation of conservation-related consulting and sales is critical for CFS, as it helps to grow their reputation as a sustainability leader within the local grower community, adding to their positive brand halo.

Within this retail organization, precision agriculture and sustainability are synonymous. Schmeling says, “Our growers have long since challenged us, too, that there really doesn’t have to be a difference between precision ag and sustainable ag. If you’re doing precision ag, you’re doing things sustainably because you are sampling, and you’re testing, and you’re making changes and practices based on those results and based on data.” When growers can see their data about inputs, costs, yields, and resulting soil health compared across years, the effects of practice changes become clearer. Growers and their advisors see which products and practices work, understand where they work and identify what else they can do to ensure a healthy crop while mitigating unintended environmental consequences such as nutrient runoff.

“We can say to a grower, ‘The green on this yield map is where it only cost you $1.90 to produce a bushel of corn, but the red is where it’s costing you $5.50.’ That’s how we turn data into actual results and possibilities for the grower.”

— Ashley Schmeling, Central Farm Service

An array of technology platforms enables ag retailers to understand farm operations and to share those learnings with growers in a way never before possible. These tools sort through field-level data, uncovering conservation agriculture needs and solutions. In addition, they allow ag retailers to demonstrate production needs and constraints to growers in a way that is visual, engaging and easily accessible. Retailers should not only know how to use the technology but also how to point growers to specific elements within the tool that most clearly show the value of sustainable farming systems they have adopted—or might adopt in the future. More broadly, leading ag retailers will continue to benefit from new products, services, and research as the agricultural industry strengthens the case for the link between conservation agriculture practices and resulting economic, environmental and social benefits.

Data visualizations documenting the impact of a conservation practice change have become a vital tool for increasing practice adoption in Iowa, Kansas and Nebraska, explains Tim Mundorf, Nutrient Management Lead with Central Valley Ag (CVA). “Farmers are more interested now because they’ve seen things work,” he says. “When their neighbor has had something work, whether it was no-till or whether it was cover crops, they’re more open to a conversation. So, like every generation, I think you’ve kind of got to learn that it doesn’t have to be just the way our father did it or the way our grandfather did it. The equipment has gotten better, it’s a lot less aggressive than it used to be. My guys that are tilling, they’re making one pass, they’re not making four or five of them. I would say overall the conversation has just gotten better because guys have seen it work in other places.”

Unlocking capital through partnerships and collaboration

Building partnerships with lenders can educate the financial community about the role of stewardship in farm resilience. This enables financial institution decision makers to better understand many of the activities growers require access to capital for – and most importantly – understand why those may be sound investments, not to be impeded. Partnership with the conservation community and federal agencies can give ag retailers a seat at the table in decision-making about the health of local watersheds and opportunities for improvement. It also provides a window into services ag retailers can add or expand, positioning them as an expert resource that saves growers time and reduces hassle. Retailers can even become approved NRCS service providers to help growers adopt practices on the ground.

"To be honest, [what we get out of the partnerships] is the credit. The name recognition when things go good, and we get people certified, that's good promotion for us."

— Ashley Schmeling, Central Farm Service

In Kansas, Cammie Vaupel of Great Bend Co-op works as a liaison between her grower-customers and NRCS to get as many acres as possible put under conservation-incentive program contracts. She works with growers to understand programs such as EQIP, CRP, and CSP, then helps them identify which might work best for their operations[28]. Later, she assists growers in completing paperwork to apply for the program. This alleviates a key hurdle that often prevents growers from pursuing such incentives.

Engaging farmers in federal conservation programs is an important investment for customers and for Great Bend, Vaupel notes. It provides growers with access to the capital needed to adopt new practices and allows Great Bend to supply the services needed to implement the change on the ground. In addition to working with NRCS, Great Bend partners with the Kansas Water Office and Kansas state watershed specialists. Retail staff serve as a liaison between these groups and Great Bend's grower-customers. The ag retail firm disseminates information and engages growers in the Water Office's water-quality incentive programs. Great Bend Co-op is driven by an ethic of attention to detail, dedication to finding evidence of a practice's benefits, and commitment to helping growers make the best decisions for their farm operations.

In addition to its work with government agencies, Great Bend Co-op engages lenders. Conservation agriculture solutions often require financial investment

above a normal operating budget, Great Bend's Vaupel explains. Lack of access to capital can create an insurmountable barrier to practice adoption, even in cases involving one-time expenses or the ability to recoup costs within a couple of seasons. The Great Bend team is hopeful it can motivate lenders to provide easier access to loans or lines of credit for sustainability practices by helping them connect the dots between conservation practices, the long-term health of a farm's natural resources, and shorter-term farm production and profitability.

In Iowa and Minnesota, the team at Central Farm Service uses data as part of the Central Advantage Program to help growers translate conservation practices into financial language they can take to lenders. Central Farm Service's Ashley Schmeling notes that the retail organization uses Syngenta's AgriEdge farm management program to help growers make financial decisions. She personally meets with lenders to ensure farm data enhances their understanding and perceived valuation of sustainable agriculture practices used by growers applying for loans.

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The meetings have gone well—so much so that one lender responded by saying, "'I'll take your cards. If I work with a producer that already works with Central Farm Service, and I see them struggling with a balance sheet or struggling to understand this whole concept, I'm going to refer them to you, since they're already doing business with you and that they look into this part of your business,'" Schmeling recalls. The team at CFS sees the benefit of forming relationships with lenders on behalf of growers. She explains, "The more we partner with the cost-per-bushel maps and benchmarking what they (growers) spend versus what the rest of the group spends, it's an opportunity for banks, I think, to look at that information a little closer. The grower's obviously got to bring it to them and say, 'Here are my numbers.' But I think that's something that they would like to see. It might give them a little more confidence, a little more faith in why the farmer across the desk from them is asking for these things that he's asking for."

Ag retailers should continue to think broadly and outside of the box about mutually beneficial partnerships with companies and organizations. They should think strategically, not only about the financial benefits of those relationships to the retail business and its growers, but also about benefits that could accrue to neighboring communities, government agencies, and other public and private entities whose support is critical to ensuring a vibrant agricultural economy.

Director of Agronomy Terry Tindall of Simplot Grower Solutions, which serves growers representing millions of acres, summarizes the benefits of partnerships and collaboration this way: "I think we need to meet the issues, to have a better understanding of a wide array of programs instead of just those within a very specific geography. You see national and international programs working together. I think it's an excellent opportunity. We work with The Nature Conservancy and other localized environmental organizations. I think it just makes a nice balance for both agribusiness and other organizations understand for environmental considerations as we all work within a community."

All of these advantages including responsiveness to market demands, supporting growers in the adoption of conservation practices, and the creation of partnerships "absolutely" help Simplot maintain its competitiveness, Tindall says.

Developing a triple bottom line approach through the diversification of products and services

Many innovators in ag retailers are deploying diversified, conservation-first portfolios — empowering growers think through not only the potential financial gains of conservation systems but also the potential environmental and social benefits. This directly impacts their reputation and grower relationships, adding a layer of competitiveness as their retail organization works to shift the industry from a sales-first mindset to a conservation-first mindset. Many of the retailers interviewed as part of this report indicate they routinely serve through agronomic consulting or education on conservation growers who purchase crop input and input application from other (competing) retailers – because they are committed to the well-being of the local agricultural community and the natural environment within which it operates.

However, this shift in focus to conservation-first does not come at the expense of the retailers' bottom line. This opportunity is captured in the online survey

component of this research, which asked leading ag retailers to detail activity around 34 conservation agriculture practices in their service region. Respondents indicated they most commonly recommend to their customers such conservation services and products as soil tests, in-season nitrogen, nitrification inhibitors, soil sampling, cover crops, slow-release nitrogen, and reduced tillage.

"Our intention is to provide them [our growers] with the critical nutrients that they need to grow a crop that may not be the largest crop that they could grow, but many times it would be the most profitable."

Similarly, when asked which of those practices help their retail organization make more money, respondents listed the top three most-recommended services and products: soil tests (86%), in-season nitrogen (81%) and nitrification inhibitors (79%). While more information is needed and it is unclear whether ag retailers recommend those practices primarily or in part because they are more profitable, it is clear that those practices are all well-documented conservation wins.

Responses aligned once again when respondents were asked to identify which conservation agriculture practices offer growers the greatest improvement potential. Soil tests, in-season nitrogen, and nitrogen inhibitors all made the top of the list as the three conservation agriculture practices with the most potential for increases in profitability. Managed correctly, these practices can help growers steward nutrients, ensure greater nutrient utilization by crops, and keep waterways cleaner by reducing runoff from fields.

By enabling growers to think holistically about economic, environmental and social benefits of their farming practices, ag retailers are providing real impacts to their grower customers and the communities in which they operate.

The obstacles

Innovators in the ag retail sector acknowledge several challenges that often impede the advancement of conservation agriculture adoption among their growers. The ag retail sector and those who work with it should understand these obstacles and drive industry investigation and collaboration that could reduce these barriers.

Cutting through confusion

A staggering amount of conservation agriculture research and science is available today, yet much of it is contradictory, inconclusive and not locally relevant. There are a variety of frameworks for measuring conservation agriculture and sustainability of practices, rather than a single unifying standard. Retailers and growers alike need a unified, measurable and locally relevant framework of benchmarks to work from in order to effectively adopt conservation practices.

The term "soil health" reflects some of the challenges related to this issue, The Mill's Ben Hushon says. He notes: "You need to define what it (soil health) is, so that you can do things you think are going to improve that, and then you need to be able to check and/or measure that. Until we define it, we can't measure it, and if you can't measure it, then how do you know if you're having a positive or a negative influence on it?" In his view, the lack of scientific consensus about the meaning of soil health, coupled with discordant metrics and definitions, makes it hard for agronomists to measure the impact of conservation practices for their customers. In turn, a lack of measurement understanding the effects of a practice becomes a guessing game. An indicator of good soil health under one measurement framework might be considered less favorable under another framework.
That leaves growers and ag retailers wondering which framework is the correct measurement of soil health, Hushon points out.

"[Growers are] doing the right things, like conservation tillage and implementing other sustainable practices to reduce nutrient runoff. They want to be part of the solution."

— Anne Cook,
The Anderson's Inc.

Due to this absence of clear and universal consensus, many ag retailers interviewed for this report conduct their own research before they recommend practices to customers. Rather than taking the recommendations of the scientific, government, nonprofit, and agribusiness sectors at face value, they apply an extra layer of scrutiny and testing to ensure their guidance to growers is as accurate and relevant as possible to local micro-conditions.

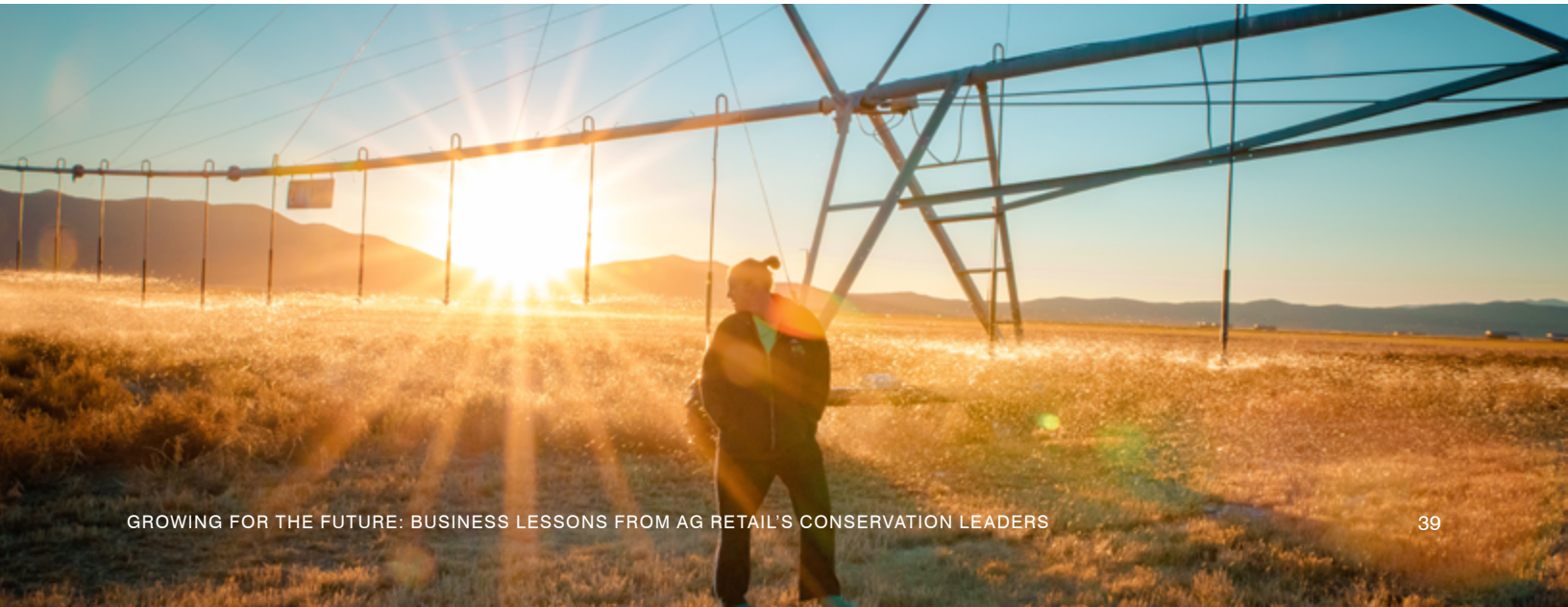
To enhance its service offering to growers in the Pacific Northwest, The McGregor Company operates 330 dedicated research acres. Team members work on the acreage to ensure that the products and practices they recommend are applicable to growers and that research claims from the industry have been replicated locally. Cat Salois, the company's Director of Research, states, "A large chunk of my job is to run a research program, that's really dedicated around serving that connection in between public research entities and the farm gates. So that means there's a ton of great ideas that come out of our university, but often that are not necessarily practical for a host of different reasons to the farm. So, we can take those ideas, put them into practice." She continues, "We can fundamentally take those ideas, put

them into a practical on the farm, both in small replicated trials or larger-scale type trials, and be able to be that kind of research entity for a lot of our customers, make sure they work in the quote 'real world,' and then we push them out to our customers to try on their farm."

The retailers surveyed admit conducting research and ensuring the viability of conservation practices for individual growers requires significant time and resources. Yet they are committed to the process because they believe it is crucial to the success of their growers and, thus, their ag retail organizations.

As Environmental Health and Safety Manager Anne Cook of The Anderson's Inc. shares, sustainability is "important to our farmers, our customers. Therefore, it's important to us because if they're not successful, we won't be either. Their success is our success," says Cook, whose retail organization serves growers in Indiana, Michigan, Ohio, and Canada in the Lake Erie basin. "It's one of those subjects or topics where you really have to lead from the front. You can't be a bystander. You've got to be involved in this and advocate for it because the worst-case scenario is that states and stakeholder groups might force regulations that wouldn't be appreciated or effective."

The complex challenge of ground-truthing conservation and sustainable agriculture to fit hyperlocal conditions extends well beyond ag retailers and the growers they serve. Ag retailers and their respective organizations should continue engaging all applicable sectors, organizations and stakeholders in identifying and advancing conservation agriculture innovation. At the highest level, ongoing research by ag retail organizations and in other sectors should emphasize collaboration to coalesce around an increasingly unified scientific framework for sustainable agricultural systems. In parallel on the local level, ag retailers and groups engaged with growers on production agriculture should replicate, verify, and fine-tune that unified framework to advance agronomic understanding and add speed and scale to the adoption of conservation agriculture systems on working lands.



Meeting grower needs

"We're constantly training"

—Brian Madigan, Country Visions Co-op

Another obstacle conservation-minded innovators in ag retail face is a limited ability to scale conservation on more acres, due to the necessity of investing more time to properly execute and maintain than traditional approaches[29]. Services such as software based sub-field-level nutrient modeling and management, precision application prescriptions, and zonal yield monitoring require substantially more time, labor and additional training compared to traditional, less conservation-minded activities. An unintended consequence of a business portfolio centered around conservation agriculture is that retail staff sometimes end up spending more time with fewer customers. The resulting opportunity cost is an inability to serve additional customers who might also need help with conservation agriculture solutions, limiting the total acres under conservation agriculture.

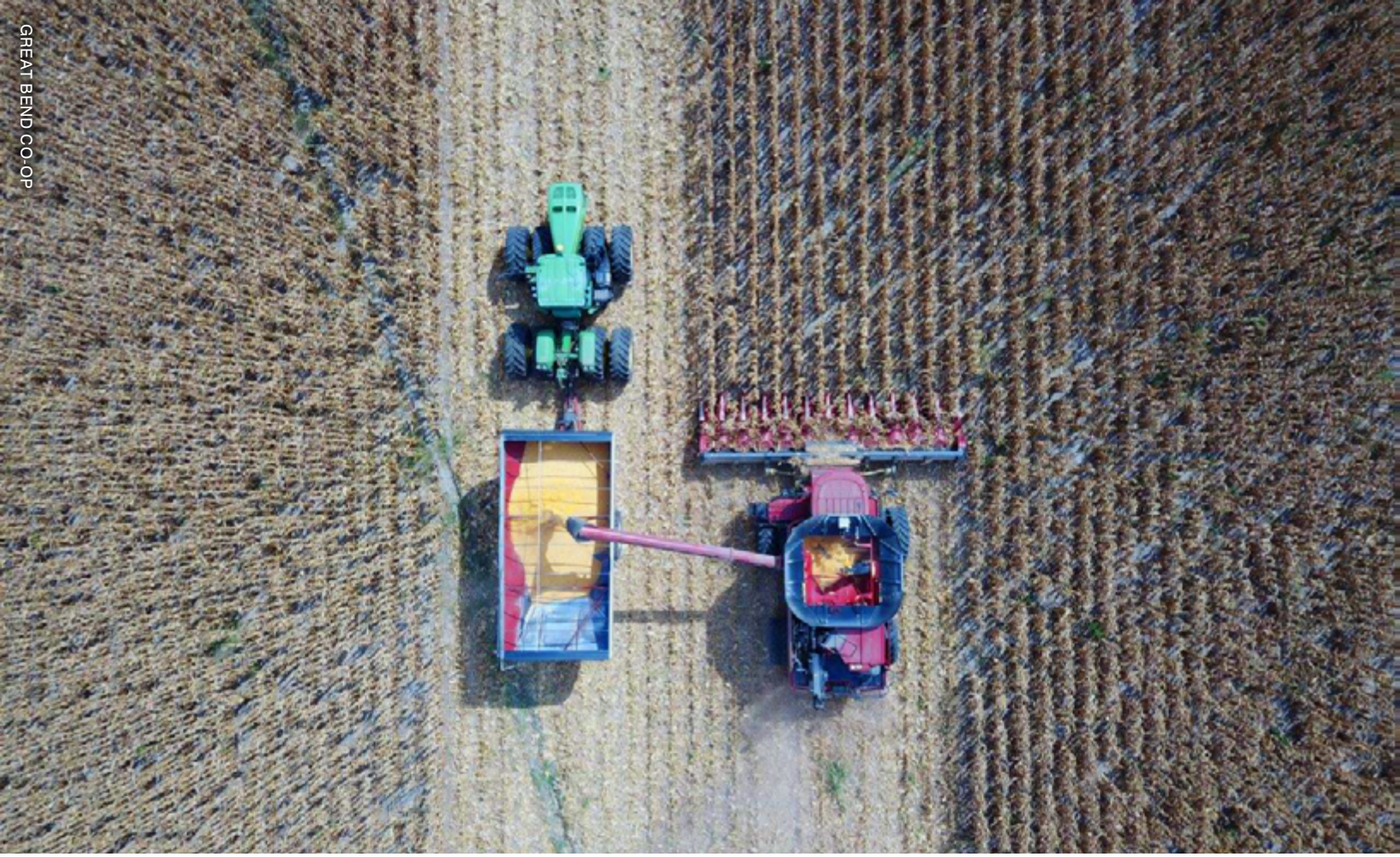
In the past several decades, The Mill's Ben Hushon says he has seen "drastic" change in the way advisors interact with growers. "It used to be we would sit down in the winter. We'd take soil tests, which have always been a huge part of our business," recalls Hushon, who has spent 30 years in agriculture and more than 15 at The Mill. "In the fall and winter, we'd take soil tests—January, February, March. We'd sit down, go through, write up a plan. We'd go spread the fertilizer, spray the herbicides, check the crop once, twice during the growing season, just to see if you needed to respray with herbicide. You were done." Although these activities remain part of The Mill's service offerings, the activities have grown to incorporate sub-field-level management, extensive nitrogen modeling, and yield monitoring – all of which requires

substantially more time and almost weekly grower visits.

Many retail organizations are not in a financial position to scale their staff size to meet the rapid growth in demand for conservation services. This issue might be especially pronounced among small independent retailers and co-ops with slim operational budgets and profit margins. Simply put, they face the dilemma of spurring their grower-customers to adopt conservation ag practices that will require additional staff to consult and manage.

Creative solutions are emerging that ag retailers should consider. For example, the Iowa Soybean Association has hired a conservation specialist to serve as a consultant to meet the conservation needs of three leading ag retailers in the state. In Missouri, MFA Incorporated worked with the state NRCS office and conservation agencies to hire two such conservation specialists. And in Kansas, Great Bend Co-Op created a specific conservation agronomy specialist role which provides hands-on support to the co-op's growers on their conservation journey.

This quandary is not unique to ag retail but instead is common to any sector seeking to solve the rapidly evolving needs of the marketplace. Social science research reveals entrepreneurs operating in "wicked" environments—those with ever-changing variables—often enjoy the greatest business success when they apply principles that have successfully worked in seemingly unrelated industries and circumstances[30]. Ag retailers should study the learnings and pitfalls facing other sectors experiencing significant disruption—such as the automotive, advanced electronics and aerospace sectors[31]—to uncover opportunities to staff and resource their retail businesses to accelerate conservation agriculture services to growers.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Final thoughts

U.S. agricultural production is immense, and agricultural management decisions have far reaching impacts. The importance of conservation agriculture as it relates to environmental outcomes and the sustainability of the agri-food value chain cannot be understated. This report demonstrates the methods innovative ag retailers are deploying to influence the increased adoption of conservation practices.

This report has outlined four distinct, yet intrinsically linked, opportunities the retail sector is capitalizing on — to their business' benefit and to the benefit of their growers and the environment. It has highlighted the challenges associated with increasing the adoption of conservation agriculture, and provided ways that others in the ag retail industry can lean in to increase adoption of conservation agricultural products and practices. The time for proactively seeking out ways to improve the reputation and impact of the agricultural sector is now.

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Growing for the future: Business lessons from ag retail's conservation leaders

Trust In Food, a Farm Journal Initiative
Environmental Defense Fund

trustinfood.com
edf.org