

ADVANCING TOGETHER STEP BY STEP.

2023 SUSTAINABILITY REPORT



Farm Credit Services
of America



FRONTIER
FARM CREDIT



SUSTAINABILITY: WHERE WE FIT IN

Letter from the President

Financing for Sustainability
at FCSAmerica and
Frontier Farm Credit

Ambitious Goals,
Coordinated Efforts

Three Core Areas of
Sustainability

OUR 2023 REPORT

PARALLEL PATHS: ADVANCING SUSTAINABILITY TOGETHER

The Growing Need for Reporting
on Sustainability

What the Industry Wants from
Supply Chains: A Conversation
with McDonald's

From DC to NYC to Lincoln,
Nebraska: A Closer Look at Our
Role and the Work We Do

STEP BY STEP: JOURNEYS OF OUR CUSTOMER-OWNERS

Versova:

Making Sustainability Tangible,
One Data Point at a Time

Roadman Farms:

Cross-Country Ownership and
Sustainable Partnerships

Green Cover:

The Business of Making Sure
Cover Crops Make a Difference

Lungren Land and Cattle Company:

Four Generations of Forward Thinking

G&W Pork:

Using Research and Reporting to Get
the Most from Pork Production

Flying W Ranch:

Lifelong Sustainability Learners



As financial cooperatives, Farm Credit Services of America (FCSAmerica) and Frontier Farm Credit view sustainability through the lens of our customer-owners: More than a specific production practice or technology, sustainability is about continuous improvement, doing more with less and passing something better to the next generation.

IT'S ALSO ABOUT FINANCIAL VIABILITY. IF IT ISN'T PROFITABLE, IT ISN'T SUSTAINABLE.

Since publicly introducing our sustainability program last year, we have had many conversations with customers, agribusinesses, industry leaders and others who share our commitment to the long-term success of U.S. agriculture.

Some led to, or deepened, partnerships aimed at developing opportunities that could reward producers for their efforts. Some allowed us to add a lender's perspective to the discussion. In every case, we made sure the needs of our customer-owners were heard. Producer profitability is just as important to sustainability as, say, soil health or reduced methane emissions.

WHEN WE LAUNCHED OUR SUSTAINABILITY PROGRAM, WE COMMITTED OURSELVES TO:



Educating our customers about opportunities, trends and challenges in sustainable agriculture.



Enabling customers who choose to participate in sustainable practices through specialized products and programs.



Engaging with third-party organizations to collaborate on partnerships and new opportunities that bring value to our customers, Associations, communities and agriculture more broadly.

We are proud of the work we have put into each of these areas. We also know there is more to be done. The past year has underscored what many of our customer-owners have long known—sustainability is a process rather than an end point.

In our second annual sustainability report, customers share the challenges and rewards they have encountered as they build more sustainable operations. I encourage you to also read the interviews with Regina Gill (Federal Farm Credit Banks Funding Corporation), Todd Van Hoose (Farm Credit Council) and Kendra Levine (McDonald's) for some perspective on demands from investors and other stakeholders.

While sustainability is a rapidly evolving space, you can count on us to be a steady, dependable partner. We are all privileged to serve you.

MARK JENSEN
PRESIDENT AND CEO





FINANCING FOR SUSTAINABILITY AT FCSAMERICA AND FRONTIER FARM CREDIT.

Whether we're asked to finance solar panels or livestock, our conversation with a customer-owner is much the same: Does it make financial sense for your operation? What would it take to make it pencil out? Does the investment get you where you want to go?

Technology is revolutionizing what sustainability looks like on many farms and ranches. Research is also helping producers better understand how specific practices improve their operations and the health of their animals and land.

All this can make sustainability feel like something new. But of course, sustainability is as old as agriculture itself. Farmers and ranchers have always understood the ability to produce food year after year relies on good stewardship.

As financial cooperatives, Farm Credit Services of America (FCSAmerica) and Frontier Farm Credit are committed to changing and evolving to meet your needs. It's why we invested in a sustainability program.

But like the farmers and ranchers we serve, we know the value of stewardship. For us, that means focusing on the financial interests of our customer-owners while also ensuring the long-term financial strength of our Associations so we're here for the next generation.

As a result, our sustainability program is rooted in the same principles that guide all our lending practices. This includes never telling our customer-owners how to operate. Instead, we work beside you step by step as a partner, supporting your financial needs and goals.

We also structure our services and lending products for agriculture, recognizing, for example, that cash flows are different for livestock producers than for farmers. Ongoing conversations with producers are helping us identify how we can best enable those interested in investments, technologies and practices that make their operations more sustainable.

There is no single path to improving an operation. And financing sustainability efforts will look different from one operation to the next. The one constant: We are committed to your financial success. It is the foundation on which sustainability is built.



**Farm Credit Services
of America**



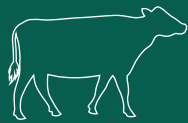
FRONTIER
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INDUSTRY SUSTAINABILITY GOALS.

American agriculture remains the largest, most efficient and productive food system in the world. There is also a growing expectation that U.S. agriculture will be part of the solution to climate and environmental challenges. In response, many commodities have set sustainability goals. Many are ambitious and require significant shifts in how business is done across the supply chain. Increasingly, there is recognition that improvement can't fall entirely on the back of farmers and ranchers. Everyone must play a part.

Here, we bring to light some of the goals set by commodity groups and where to turn for more information about them. They represent a fraction of the work occurring in agriculture, underscoring the commitment of the industry to ensure we all benefit from a more sustainable food system.



DAIRY

In October 2020 the Innovation Center for U.S. Dairy established the U.S. Dairy Net Zero Initiative (NZI) that included the following goals to be accomplished by 2050:

Greenhouse gas neutrality.

Optimize water use while maximizing recycling.

Improve water quality by optimizing the use of manure and nutrients.

[Click here for specifics about each goal and progress toward targets.](#)





BEEF

The U.S. Roundtable for Sustainable Beef established goals for each of their six high-priority indicators and set targets with each beef industry segment for each indicator. These goals are a catalyst for industry innovation to achieve desired outcomes. The indicators are:

Air and Greenhouse Gas Emissions: The U.S. beef supply chain will achieve climate neutrality by 2040.

Land Resources: The U.S. beef supply chain will work to maintain and improve grazing lands under the care of U.S. beef producers.

Water Resources: By 2050 the U.S. beef supply chain will improve water management strategies and improve water quality.

Employee Safety and Well-Being: The U.S. beef supply chain is committed to continuously improving the safety, development and well-being of individuals working throughout the industry.

Animal Health & Well-Being: The U.S. beef supply chain will continue to improve animal health and well-being.

Efficiency and Yield: The U.S. beef supply chain will improve efficiencies, enhance product value and increase demand, which collectively will enable operations and businesses to maintain and improve individual and community financial health.

[Click here for specifics about each goal and progress toward targets.](#)



PORK

The pork industry is on a mission to be the most sustainable meat by doing what's right for humans, animals and the environment. This is accomplished by following their We Care Ethical Principles and committing to continuous improvement in all areas of pork production. These commitments include:

Animal Well-being: End-to-end certification that is fully transparent and uses industry standards to demonstrate compliance.

Our People: Ensuring all our caregivers have knowledge and skills to thrive and provide quality care while being safe in their jobs.

Environment: Protecting our planet's natural resources—water, soil and air—and realizing the impact of greenhouse gases on the environment.

Public Health: Supporting public health and the well-being of the pigs under our care using best practices.

Food Safety: By 2030, 100% of fresh pork products will be traced through the supply chain using technology that allows the public to easily access information on how pork was raised and produced.

Our Communities: Driving sustainable, equitable development and prosperity in our communities by generating desirable jobs, growing rural economies and helping meet community needs.

[Click here for specifics about each goal and progress toward targets.](#)



CORN

U.S. corn farmers are committed to conservation and their role as stewards of the land. Growers focus on improving resiliency and efficiency through advances in science, technology and precision equipment. Working against a baseline established in 2020, U.S. corn growers are committed to the following sustainability achievements by 2030:

Increase land use efficiency by 12%.

Reduce soil erosion by 13%.

Increase irrigation water use efficiency by 15%.

Increase energy use efficiency by 13%.

Reduce GHG emissions by 13%.

[Click here for specifics about each goal and progress toward targets.](#)



SOYBEANS

The U.S. soybean industry is committed to and actively targeting goals where soybean farmers can make the biggest difference at the farm and through the value chain. Groups representing U.S. soybean farmers—United Soybean Board, U.S. Soybean Export Council and the American Soybean Association—have outlined sustainability goals. By 2025, U.S. soybean farmers aim to:

Reduce land use impact by 10%.

Reduce soil erosion an additional 25%.

Increase energy use efficiency by 10%.

Reduce total greenhouse gas emissions by 10%.

Within each agriculture segment, progress is ongoing toward the accomplishment of all outlined goals. Collaboration across all industry value chains is occurring, between retailers and farmers, suppliers and processors to accomplish industry goals.

[Click here for specifics about each goal and progress toward targets.](#)



THREE CORE AREAS OF SUSTAINABILITY.

The pillars of sustainability are environmental, economic and social. The specifics of each pillar can differ depending on the industry. The lists below, while not exhaustive, represent areas of sustainability that most impact our customers because they have an interest or involvement in them, or because external forces are driving change in food production. None of the pillars stand on their own. They are interwoven to support a more sustainable food system.



ENVIRONMENTAL

Greenhouse gas emissions (GHG) such as carbon dioxide, methane and nitrous oxide

Land use and water consumption

Carbon sequestration

Biodiversity of plants and animals

Providing ecosystem services, such as water purification, fire mitigation, soil health, wildlife habitat, invasive weed control and others



ECONOMIC

Generational transfer

Producer profitability

Economic impact and rural development: tax contributions, donations, job creation, economic growth, business support, enhanced livelihoods and economic resilience



SOCIAL

Worker safety and training

Cultural, recreational and community-wide quality of life

Animal health and well-being

Safe and healthy food supply



THE GROWING NEED FOR REPORTING ON SUSTAINABILITY.

Prove it.

When asked for proof that the food we buy is safe, nutritious or responsibly grown, agriculture and the food industry have produced the evidence.

“Prove it” is now part of the sustainability lexicon. Five years ago, no one asked Farm Credit, “what are you doing about sustainability,” says Todd Van Hoose at the Farm Credit Council. That has changed. Stakeholders, investors and others want to know how the Farm Credit System measures and manages sustainability, according to Van Hoose.

There is broad recognition that science, technology and policy haven't caught up to demand. Something as basic to accountability as a baseline measurement of methane gas in a feedlot can be both challenging and costly.

Many are working to equip agriculture with the tools it needs. We have donated to the Nebraska Integrated Beef Systems Initiative (NIBSI) to support the research it is doing to support improvement in animal welfare, nutrient management, health and performance, which are all critical components of sustainability.

In the meantime, companies such as McDonald's are on the leading edge of using data to drive decisions. One of McDonald's initiatives comprises one million acres of ranchland on which soil samples are collected and analyzed to determine the carbon impact of different practices, says Kendra Levine, US Sustainability Lead at McDonald's.

The customers featured in the report have taken different approaches to measuring or documenting their sustainability practices. What they share is a commitment to continual improvement.



WHAT THE INDUSTRY WANTS FROM SUPPLY CHAINS:

A CONVERSATION WITH MCDONALD'S.

When it comes to sustainability, how does a consumer-facing company like McDonald's view the food supply chain? What are they hoping to see moving forward? In what ways are they partnering on science-based initiatives and reporting? Kendra Levine, US Sustainability Lead at McDonald's, answered these and related questions for us in a wide-ranging discussion.

LET'S START BY TALKING ABOUT YOUR CURRENT POSITION. CAN YOU TELL US ABOUT YOUR ROLE AND THE PATH THAT BROUGHT YOU TO WHERE YOU ARE NOW?



I currently lead our US sustainability team, which covers our supply chain and restaurant-facing sustainability work. I started at McDonald's eight years ago on the US sustainable sourcing team and worked there for more than four years. Then, I worked with our supply chain team in Latin America before starting in my current role two years ago.

—KENDRA LEVINE
US SUSTAINABILITY LEAD AT MCDONALD'S



AND BEFORE MCDONALD'S?



My career began in international agricultural development, working for four years directly with smallholder farmers in Guatemala and Kenya. My roles were to support them and their generation of revenue and management of their environmental impact.

WHAT ARE SOME KEY SUSTAINABILITY CHALLENGES AND OPPORTUNITIES AT MCDONALD'S?



We're a large company, so we have the opportunity to have a lot of positive impact. We also want to make sure we're mitigating any negative impacts, both in our restaurants and throughout our supply chain. The challenge and opportunity is to impact the most important areas with the resources available.



PHILOSOPHICALLY, HOW DO YOU APPROACH THIS?



We have five core values as a company: Serve, Inclusion, Integrity, Community, Family. Particularly related to sustainability are Integrity—we do the right thing, and Community—we're good neighbors. Our CEO, Chris Kempczinski, has said, "...We have both a privilege and a responsibility to help lead on issues that matter most in communities – and there is no issue more urgent globally and of impact locally than protecting our planet for generations to come."

As we act, we work in partnership with our suppliers. We have a three-legged stool business model made up of the corporation, our franchisees and our suppliers—which work together to fulfill our company purpose of feeding and fostering the communities in which we operate. Our belief is that McDonald's will not be successful long term unless all three legs succeed. This has been part of our business model from the start. We see our suppliers as critical supporters to driving success not only within supply chain but the entire organization.

HOW DO YOU COMMUNICATE THAT PHILOSOPHY?



Our direct suppliers know our three-legged stool model well, as it's frequently referenced as we work together. When we start collaborating with indirect suppliers further upstream through to the farm level, we also share this philosophy to provide context for our approach.

HOW DOES ALL THIS PLAY INTO HOW YOU DEFINE SUSTAINABILITY?



It is really just the ability for our business to succeed well into the future. For our business to succeed as we hope, we need to be able to source product, which necessitates that the people, farms and environment in our supply chain must be able to continue to produce and thrive.

That has always been top of mind for McDonald's. If we want to make a change that impacts the environment or animal welfare, we have to make sure that these changes take into consideration the balance of all three legs of the McDonald's stool.

WHAT ARE SOME OF YOUR GOALS WHEN IT COMES TO SUSTAINABILITY?



We have many goals driving our sustainability work. One goal is to have 100% of our primary guest packaging from renewable, recycled or certified materials. We're working to improve recycling and enhancing circularity within the industry by the end of 2025 as well. We have multiple animal health and welfare goals for chicken, pork and beef—and successfully reached our goal of sourcing 100% cage free eggs in all U.S. restaurants at the end of last year, two years ahead of our 2025 deadline. And of course, working to reduce our greenhouse gas emissions, both across the supply chain and within our restaurants by the end of 2030.



WHAT ARE SOME OF THE CHALLENGES YOU'VE FACED WITH REACHING THESE GOALS?



One challenge we've faced is the **lack of data about the impact of agriculture production practices that could reduce greenhouse gas emissions**. For example, there is some evidence that changes to grazing practices could have some significant climate impacts and also resiliency impacts for producers, but there's a need for more scientific investigation to know more definitively. When making our goals and decisions, **we put a large emphasis on science and what the latest research is telling us**.

Another challenge we face is that **the standards for a company to report on agricultural climate impacts in its supply chain are evolving** but we need a transparent and standardized method of reporting to the many stakeholders who are asking for it now. We must acknowledge that this space is still being developed, but I don't think it should hold us back from moving forward as fast as we can—we have to remain agile.

HOW HAVE SUSTAINABILITY GOALS CHANGED FOR MCDONALD'S OVER TIME?



Just a decade ago, making progress on sustainability relied heavily on third-party certifications. For many companies, these certifications were the goal: "100% of X commodity was sourced by Y certification." But now McDonald's and many companies are shifting to be more outcome-based. **Measuring if we're achieving the intended outcome, such as reducing greenhouse gas emissions, or improving water quality, is where the industry is moving**.

Our customers want transparency into how their food is produced and they want to feel good about it. They're expecting us to have data and report using trusted and credible methods.

And **it's not just customers expecting transparency**—it's NGO partners, governments and investors. We need transparency and visibility into what's happening in our supply chain. The more information we share, the more trust is built.





WHAT ARE SOME OF THE WAYS YOU'RE WORKING IN PARTNERSHIP WITH THE SUPPLY CHAIN?



We focus a lot on how **partnerships can improve sustainability**. We work closely with our direct suppliers to engage additional partners earlier in the supply chain. Together, **we try to mitigate the risk that can come with trying something new** by working with trusted implementation partners in different regions who understand the context of what those producers are facing on their particular land financially and within their communities, and can provide tailored technical assistance.

We are also founding members of sustainability efforts that bring people from each sector of agriculture industries together, like the U.S. Roundtable for Sustainable Beef (USRSB) and US Roundtable for Sustainable Poultry and Eggs. Within these types of groups we work together to understand what is needed to enable adoption of new practices that will lead to positive sustainability benefits and work together to create that support.

WHAT DO YOU SEE AS THE VALUE OF THESE INITIATIVES?



Roundtables are valuable because we get to hear voices throughout the supply chain. **Listening and learning helps inform the strategies that we end up developing** and the structures that we end up putting in place.

ANY SPECIFIC EXAMPLES AND DOES REPORTING PLAY A ROLE?



With beef, we are looking at what will create resiliency at all levels: cow-calf, feedyard and feed production—and we currently have investments in initiatives for each.

At the cow-calf level, for instance, we have an initiative in the Northern Great Plains where we're working with WWF (World Wildlife Fund), the Walmart Foundation and our supplier, Cargill, to provide technical assistance to ranchers and continued education around practices that create more resiliency.

Ultimately, **the initiative is covering one million acres of ranchland in those regions**. They're also adding to our understanding of grazing's impact on carbon sequestration by taking soil samples to assess the outcomes of specific practices.

ANY OTHER BENEFITS?



This initiative is building community resiliency as well, because we're partnering with strong community groups to increase peer-to-peer communication. So, there's a lot of education taking place there as well.



WHAT ROLE DO YOU SEE CORPORATIONS AND ORGANIZATIONS PLAYING IN SUSTAINABILITY?



It's imperative for corporations and financial institutions to be involved because there is a shift that needs to happen, and McDonald's has a role that we can play to support that shift. We're investing in these things because we see that we have a role as much as our partners do throughout the supply chain.

AND WHAT ABOUT THE ROLE OF FINANCIAL INSTITUTIONS?



It's also important for financial institutions to think about what role they can play to de-risk and support this change—and not just to think about it, but to **do it**. And it's not just an ask of financial institutions. It's an ask of all of us in the supply chain to be thinking about the role that we play—and be willing to step up and try that. So, my expectation would be that they're at the table and thinking, "this is what I can do and I want to partner with you."

LOOKING AGAIN AT THE OVERALL PICTURE, WHAT EXCITES YOU MOST ABOUT PARTNERING WITH THE SUPPLY CHAIN?



Personally, I get excited about the size of our impact—and that it can happen in ways that are truly positive. There aren't many industries that can say that.

For many industries, making a change may create less negative outcomes or have a neutral impact at best. But adopting specific, science-based agricultural practices can make a truly positive difference for the world by creating more biodiversity and better water outcomes. It can take carbon from the atmosphere and put it into our soils, which leads to healthier soils for both producer and animals.

US Farmers and Ranchers in Action has a video that depicts producers as climate heroes. And I absolutely love it. If we focus on our positive impact, it can be motivating and bring our defenses down.

On the path forward, I think it is important to constantly reflect on what we have learned while asking ourselves the hard questions that will move the needle. Every day I ask myself the question: "What's the greatest amount of good that we can do as a collective industry?" This is what fuels my energy and enthusiasm for this work. Through the power of partnership and shared purpose of delivering long lasting positive impact we will continue to answer that important question, while raising the bar for what is possible in generations to come.



FROM DC TO NYC TO LINCOLN, NEBRASKA

A CLOSER LOOK AT OUR ROLE AND THE WORK WE DO.

Farm Credit is a nationwide network of four banks and 58 locally owned cooperatives. We operate as a Government-Sponsored Enterprise (GSE) under a congressional directive to finance agriculture and rural America. Half of agriculture's financing comes from the Farm Credit System.

We don't receive any government money to fulfill our mission. Instead, we rely on bonds sold to investors across the globe to finance farmers, ranchers, agribusinesses, rural cooperatives, rural home buyers and more.

Like all lenders, we also operate on trust. Whether they are customers, lawmakers or investors, our stakeholders increasingly want to know how Farm Credit is contributing to a sustainable food system. Todd Van Hoose of the Farm Credit Council and Regina Gill at the Federal Farm Credit Banks Funding Corporation discuss the work being done to ensure Farm Credit is a trusted partner in advancing and improving agriculture for today and tomorrow.

Van Hoose is president and chief executive officer for the Council, which is based in Washington, D.C. Gill served as managing director-investor relations until her recent retirement from the Federal Farm Credit Funding Corporation in New Jersey. Their comments below have been edited for clarity.

CONGRESSIONAL OVERSIGHT



CONGRESSIONAL AGRICULTURE COMMITTEES

REGULATION/SUPERVISION/TRADE ASSOCIATION



FARM CREDIT
ADMINISTRATION
(REGULATOR)



FARM CREDIT
SYSTEM INSURANCE
CORPORATION



FARM CREDIT
COUNCIL

FISCAL AGENT FOR THE BANKS



FEDERAL FARM CREDIT BANKS FUNDING CORPORATION

SYSTEM BANKS



COBANK, ACB



AGFIRST, FCB



AGRIBANK, FCB



FCB OF TEXAS



COOPERATIVES AND OTHER
ELIGIBLE BORROWERS



ASSOCIATIONS



FARMERS, RANCHERS, RURAL HOMEOWNERS AND OTHER ELIGIBLE BORROWERS

STRUCTURE/ OWNERSHIP OF FARM CREDIT SYSTEM

KEY
← LOANS
←... FUNDS
← REPAYMENT



WHEN DID SUSTAINABILITY BECOME A TOPIC AND HAVE CONVERSATIONS CHANGED IN RECENT YEARS?



The evolution of what sustainability means has changed quite a bit. Ten years ago, the conversation was, “How do we make our farm more sustainable? How do we encourage profitability, make our operation available to the next generation, keep in business?”

The conversation has fundamentally changed to a more global, as opposed to a farm-level view, of sustainability. A lot of people equate it to ESG (environmental, social and governance). In other words, a lot more social welfare issues and those kinds of things. If you limit it to sustainability, the conversation is more climate focused, at least in the ag space.

—TODD VAN HOOSE
FARM CREDIT COUNCIL



WHAT EXPECTATIONS DO LEGISLATORS AND OTHERS HAVE OF FARM CREDIT IN THE AREA OF SUSTAINABILITY?



It isn't so much, “What is your institution doing? Are you examining your portfolios?” They ask us more about the customer side. “What are farmers doing? What are you helping them to do? Do you have the tools you need?”

We're trying to help people understand that sustainability—at least as farmers think about it—has largely been incorporated mainstream into their operations and Farm Credit is financing that.

—VAN HOOSE



Investors generally view the Farm Credit System favorably for our GSE status, commitment to mission, strong financials and disciplined market access. These considerations help them assess the risk inherent in the purchase of our securities.

But more and more, investors want to also understand how the System measures and manages sustainability.

—REGINA GILL
FUNDING CORPORATION





WHERE DO YOU SEE THE PRESSURE FOR CHANGE COMING FROM?



The political side of this does come and go, and it is partisan. And I don't mean that in a negative way. But almost irrespective of that, the private sector is now driving a lot of this, and it is the same kind of pressure we've always faced in agriculture.

Ultimately, consumer demand is felt back at the farm and the consumers' attitudes are changing the boardroom director, retail entities and food suppliers out there. They are feeling that pressure and they are backing that down the supply chain.

So, we are getting some pressure politically, but probably not as much as we are getting from the consumer and companies.

—VAN HOOSE



Each day, the Farm Credit Funding Corporation, on behalf of the Banks of the Farm Credit System, issues bonds and notes in the capital markets. Those securities are ultimately purchased by institutional investors in the United States and around the world for their fixed income investment portfolios. That constant flow of investor capital is really the lifeblood that allows the System to fulfill our mission of lending to all qualified borrowers. Most investors have a basic appreciation for the System's social mission of food security and the strength of a cooperative governance structure. But they are unclear on how the System measures and manages environmental risks. Ultimately, as sustainability considerations are embedded in risk management systems and analysis, data will be required.

There are growing expectations among important stakeholders, like institutional investors, that Farm Credit will clearly articulate how sustainability risks are being measured and managed. In time, if those expectations are not met, institutional investors may choose to use their capital by purchasing notes and bonds of other issuers who have done so. Ultimately, it could lead to an increase in the cost of capital for Farm Credit, resulting in higher interest rates for borrowers. Over the years, we've worked with many customers to finance their sustainability stories. Working together, we have a great story on which to build.

—GILL

HOW DO YOU SEE FARM CREDIT'S ROLE AS AN ADVOCATE FOR AGRICULTURE?



We're trying to keep big Washington mandates from being pushed down in an unreasonable way that will be painful to farmers. That's one of the reasons we helped start the Food and Agricultural Climate Alliance (FACA). FACA is building a broad-based coalition of agriculture, food and environmental groups that have endorsed some fundamental principles around voluntary market-based and science-based solutions to climate and conservation issues. We've been very successful there. The conversation has changed from what somebody in a boardroom might consider a great idea to how we can help farmers adapt in ways that are A) helping profitability and their farm sustainability and B) helping with climate goals and conservation goals. This agricultural alliance with the environmental food community has fundamentally changed the shape of discussions in DC.

—VAN HOOSE



THE UNIVERSITY OF NEBRASKA-LINCOLN

SUPPORTING COMMERCIAL-SCALE RESEARCH ON SUSTAINABLE BEEF PRODUCTION.



The University of Nebraska-Lincoln has a significant statewide system of infrastructure supporting beef research. In 2018, it established the Nebraska Integrated Beef System Initiative (NIBSI) to help the industry solve resource and animal welfare challenges.

The NIBSI vision is to create knowledge of alternative systems for efficient and sustainable beef production. This includes improved land use efficiency through the integration of livestock and crop production systems and the development of precision-based nutrition and technology strategies to optimize the health and productivity of animals. In this, NIBSI prioritized feedlot innovation.

However, NIBSI first needed to upgrade its Feedlot Innovation Center. Farm Credit Services of America (FCSAmerica) and Frontier Farm Credit committed to being one of the major donors for the project and provided \$300,000. Cattle feeding is important economically to the state of Nebraska and the research being done by NIBSI will benefit cattle operators across the country.

These Feedlot Innovation Center improvements will use commercial-scale open-air and covered pens that allow faculty and students to test varied settings and determine which improve animal welfare, nutrient management,

health and performance. The Associations also donated an additional \$200,000 for specific upgrades and improvements related to sustainability technology. Precision management tools, including feed intake, will use the latest technologies to evaluate animal production efficiencies and measure greenhouse gas emissions. Additionally, the center will expand its research to include the impact of low-stress animal handling and increase its emphasis on animal welfare.

The upgraded facility allows faculty to create and test precision management technologies that can be implemented by the industry. The donation from FCSAmerica and Frontier Farm Credit supports the development and testing of a robotic pen manure scraping and removal system. This robotic innovation can help beef finishing operations improve labor and efficiency, decrease costs and decrease nitrogen loss for greater environmental sustainability.

All the technology at the center supports education, helping to train students in an advanced environment to be the next generation of feedlot professionals.

Supporting this work is just one of many ways FCSAmerica and Frontier Farm Credit is helping the industry become more sustainable both now and for years to come.

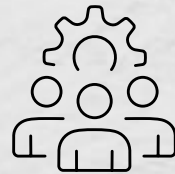


VERSOVA

MAKING SUSTAINABILITY TANGIBLE, ONE DATA POINT AT A TIME.

FORMED IN
2016

Versova has become

**ONE OF THE LARGEST EGG
PRODUCERS IN THE U.S.****1,350 COMBINED EMPLOYEES
ON 9 FAMILY FARMS,**

all sharing a common set of commitments.

Versova and the farms that comprise the company are like many agricultural operations in the U.S. They adopted practices that fostered long-term sustainability because they made sense. Over time, the company came to recognize the additional value it could gain from defining and measuring sustainability in the most public way possible. Versova released its first sustainability report in 2023.



*If we don't have a baseline, we'll
never know what or when to
measure and how to improve.*

—EMILY BATTILEGA
DIRECTOR OF SUSTAINABILITY SINCE 2022



Emily Battilega is the company's first director of sustainability. She brings a unique understanding and perspective to the role, having previously managed the company's operations in Oregon. She understood both the power of data and how to mine it, with the goal of accelerating further data collection and improvement.





TAKING THOSE ALL-IMPORTANT, NEVER-EASY FIRST STEPS.



Versova modeled its work on priorities articulated by the U.S. Roundtable for Sustainable Poultry & Eggs (US-RSPE). This multi-stakeholder organization was created “to advance, support and communicate continuous improvement in sustainability for the value chain.”

Versova is no stranger to US-RSPE or its mission. Doug Mack, COO at Versova, served as an active participant in developing the organization’s first-ever sustainability reporting framework for U.S. chicken, turkey and egg supply chains—from producer to the final customer.

“*For our work, we decided to mirror US-RSPE’s pillars of people, planet and poultry. We started off with the three categories and picked data points we could highlight for each of them.*”

—EMILY BATTILEGA, DIRECTOR OF SUSTAINABILITY

Versova was intentional in choosing data that would allow the company to learn and move forward. “Even though the data existed, we knew that we weren’t going to be able to report on every single metric we had for our operations,” said Battilega. “So, we picked some highlights, such as feed information, electricity use and waste. For less readily accessible information, I just said, ‘OK, we’ll do that a different year, but let’s just start small, easy and in order of importance.’”





LEARN, IMPROVE, REPEAT.



A lot of data had to be entered by hand. This process provided insights into the overall operations:

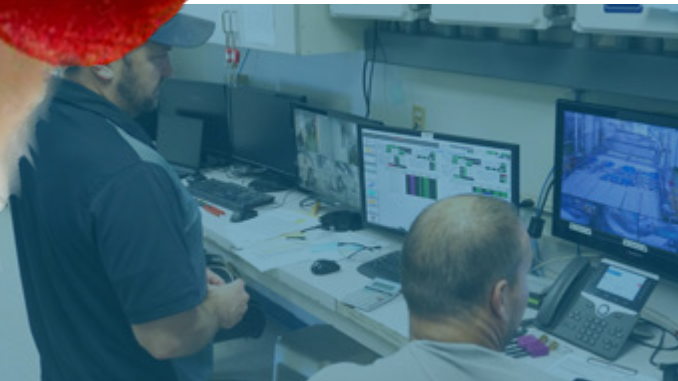


Once I began reading those invoices, I started finding more ways that we could actually improve our operations. I found actual cost savings.

—EMILY BATTILEGA, DIRECTOR OF SUSTAINABILITY

Moving forward, for example, accounting will input both kilowatt hours and the associated electricity costs. The company can then extract data more quickly and easily for ongoing reviews of usage and potential savings. The same is true for other key inputs.

Next, Versova plans to use the data to develop monthly operational scorecards, which will be used to compare operations. This level of reporting poses challenges, but it has already paid off. “Once our employees saw that first sustainability report, I had people from many different parts of our operation—whether it be safety, human resources, accounting or the line level—say they had no idea our company did all this,” said Battilega.





THE ROLE OF CASE STUDIES IN REPORTING.

Ovation Farms offers a window into Versova's commitment to continuous improvement. The company is evaluating two styles of cage-free layer housing at the Thompson, Iowa, farm to determine how each compares on a variety of sustainability metrics, including:



FEED AND WATER
CONSUMPTION



ENERGY USE



EMPLOYEE
SAFETY RATES

“While the data collection will be ongoing, we are already seeing huge improvements with efficiency,” said Battilega. “The first improvement is in the labor needed to care for these birds. The design of these buildings makes it easier for our poultry caretakers to inspect the flocks and complete their daily tasks.”

The housing design also cuts labor hours at Ovation by half. Previously, the feed mill was on site, but workers still delivered feed by truck. The feed system has been remodeled, automating deliveries using a conveyor system to move feed from the mill to the chicken house. Versova also installed a state-of-the-art biosecurity room to limit potential contamination from workers, vehicles, equipment and visitors.



16 CLEAN AND COMFORTABLE SHOWER FACILITIES
TO ENSURE EMPLOYEE SAFETY AND PRIVACY.

As an added benefit, these biosecurity rooms have heated floors to minimize the impact of cold Iowa winters.



Our sustainability program at Versova incorporates our care of our people, planet and poultry. The project at Ovation Farms is looking at how we utilize our resources most efficiently.

—EMILY BATTILEGA, DIRECTOR OF SUSTAINABILITY

Taking those all-important, never-easy first steps in reporting metrics. Sharing case studies of sustainability in action. These reasons and more are why Versova exemplifies the value of taking initiative when it comes to sustainability.



ROADMAN FARMS

CROSS-COUNTRY OWNERSHIP AND SUSTAINABLE PARTNERSHIPS.



Larry Roadman grew up in Maryland, currently lives in Maine and owns a multi-generation farm halfway across the country in Grundy County, Iowa. His situation is far from unique. Increasingly, people who don't come from farm backgrounds are choosing to own and operate one. Roadman's ownership journey has involved many turns. Along the way, he has built strong partnerships with family, tenants and farm managers to operate in a way that is both economically and environmentally sustainable.





'A 1/16TH INTEREST IN AN 80-ACRE PLOT.'

Roadman does have ties to his Grundy County farm ground. In 1874, Roadman's great-grandfather John left Pennsylvania for Iowa. There, he met his wife Lusetta and settled on the 408 acres that comprise a portion of the Roadman property today.

The farm passed down to Roadman's grandfather, who later divided the ground between his six children, one of whom was Larry's father. By then the ownership stake for each family member had dwindled significantly. But keeping it in the family mattered deeply to Roadman; in his formative years, he traveled by train to spend time on the farm.



All of a sudden, we had 1/16th interest in an 80-acre plot. After spending a lot of time narrowing down the ownership, we finally got it back into my immediate family at the turn of the millennium.

—LARRY ROADMAN
OWNER

AN 11-YEAR-OLD ON A TRAIN FROM BALTIMORE

"My grandparents and parents essentially made an investment in sustainability back in the 1950s," said Roadman. "I was 11 years old when they sent me to Iowa to live with my grandparents on the farm. I spent a month there over three summers working with them daily and that's where my deepest connection to the farm was established."



The farm left such an impression that, as adults, he and his sister entered into a 25-year land contract to buy other descendants' ownership shares. The Roadmans consolidated their land holdings in 2002, more than a century since anyone in the family had been physically involved in the operation. Since the 1920s, just two families, three generations each, have lived on the property. The current farm operator, Kyle Dudden, has been there since 1995.





FINDING THE RIGHT FARM MANAGER.

The family also relies on Hertz Farm Management to support the operation with boots on the ground in Grundy County. “Hertz improved the corn and soybean rotation by working with the farm operator to win continuing corn and soybean seed contracts,” Roadman said. “At one point, the farm also had livestock.”

“But I found it hard as an absentee landowner to deal with livestock and the buildings they require,” explained Roadman. Morgan Troendle, the second farm manager at Hertz to work with the Roadmans, said a decision had to be made about what to do next with the livestock side of the operation.



A lot of our recommendations for the farm come out of the family’s vision, then applying our knowledge of conservation and production practices to align with the family’s goals.

—MORGAN TROENDLE, FARM MANAGER AT HERTZ



URBAN PLANNING AND PRAIRIE STRIPS?

Christian Roadman, Larry’s son, was a graduate student at the University of Michigan at the time. “Our son was in Ann Arbor getting his master’s degree in urban planning, which isn’t quite related to agriculture, when I get an email from him citing an article on prairie strips,” explained Roadman. “And in the email, he asked, ‘Dad, can we do this?’” Hertz set up a meeting with Dan Jaynes from the USDA, the University of Northern Iowa Tallgrass Prairie Center and Iowa State University’s Science-Based Trials of Rowcrops Integrated with Prairie Strips (STRIPS).





THE FAMILY THAT DECIDES TOGETHER.

Christian and his brother, Keene, were included in that initial meeting. “It was a great meeting, especially since we weren’t able to give our boys the experience that I had as an 11-year-old,” said Roadman. “It’s what got us into prairie strips.”

They worked out the benefits of adding strips of prairie along contours in crop fields, including retaining nutrients, minimizing erosion and runoff and creating wildlife habitat. The family also received clear counsel about the economic impacts of strips and how to make the numbers work.

In addition to the prairie strips, they implemented a saturated buffer system to filter tile drainage and minimize the impact of runoff into ditches, streams and rivers.

THE IMPORTANCE OF PARTNERSHIPS IN REPLICABILITY

Reflecting on the importance of partnerships, Roadman noted that the business of sustainability ultimately comes down to replicability.

“We’re in the space of replicability and I think that’s why the partnerships are so important to us,” said Roadman. “Replicability, the ability to do well on a small scale and to have individuals see something and replicate it, that’s what’s really exciting and the partnerships are the ones who make the information accessible and have the ability to see things that can make differences on the scale of small- to medium-sized forms.”



I will say that, in most cases, the best success rate for having the family hold on to a farm is for each generation to have some tie to it or interest in it.

—MORGAN TROENDLE, FARM MANAGER AT HERTZ

Roadman’s commitment to preserving his family’s agricultural legacy has not only withstood the challenges of fractional ownership but has thrived through strategic collaborations.



GREEN COVER

THE BUSINESS OF MAKING SURE COVER CROPS MAKE A DIFFERENCE.

Managing soil erosion. Retaining moisture. Enhancing biodiversity. Improving overall soil health. All play a key role in the future of farming. Green Cover believes in that future and is doing its part with customized, diverse cover crop mixes.



Green Cover is currently serving more than

18K CUSTOMERS FROM THEIR OFFICES IN
BLADEN, NEBRASKA AND IOLA, KANSAS.



It has cumulatively helped cover more than

5.5M ACRES OF LAND
WITH SUPPLIED SEED.

HUMBLE BEGINNINGS.

The company was founded by Keith and Brian Berns, two brothers who grew up on acreage they still farm. Brian started farming after college graduation in 1988 and began experimenting with no-till techniques. Keith taught high school for about a decade before returning to the farm. By then, the brothers were ready to switch 100% of the operation to no-till.



Since we were already connected with no-till, we knew many of the people who would become rockstars of the movement.

—KEITH BERNs
CO-OWNER / SALES AND MARKETING MANAGER





In 2006, at one of the early no-till conferences they attended, a Brazilian farmer talked about experimenting with multi-species cover crop mixes. Most U.S. farmers at the time planted a single-species cover crop, or simple, two- or three-way mixes.

“Seeing 10-way and 12-way mixes got everyone pumped up,” according to Keith. “It was a watershed moment for the movement.” The brothers watched as other trailblazing farmers planted these multi-species mixes and saw initial success in places like North Dakota. “It was an incredibly dry year there,” continued Keith. “The single species cover crops burned up and did nothing, while the more diverse mixes produced significant amounts of forage, tonnage and biomass for those farmers.”

THE MOISTURE QUESTION.

Before doing anything themselves, they wanted to closely study the moisture impact that planting cover crops might have. A small Sustainable Agriculture Research and Education (SARE) grant allowed them to buy moisture sensors, which they placed at one-, two- and three-foot depths in 18 different monoculture cover crop strips along with two diverse mixes made from these 18 species. The remainder of the 80 acre field was planted to a diverse mix and grazed through the fall and winter. It proved to be a relatively moist summer, and they were able to precisely see the cover crop impact on moisture levels.

They planted two different mixes with

18 TOTAL COVER CROP SPECIES AND GRAZED CATTLE ON THE LAND.

It proved to be a rainy year, and they were able to precisely see the impact on moisture levels.



1

We learned three things that year.

First, the mixes used moisture more efficiently than anything planted by itself.

2

Second, the cattle grazing those mixes came off the fields like they were coming out of the feedlot.

3

And third, the seeds themselves weren't easy to find. We had to look hard because few people were combining them in diverse mixes.

—KEITH BERNS
CO-OWNER / SALES AND MARKETING MANAGER





A MULTI-GENERATIONAL BUSINESS IS BORN.

While they experimented, some of their children were getting old enough to have an interest in farming. The brothers knew that they needed to grow to make room for the next generation. They started Green Cover in 2009, marketing seed mixes to other producers. All seven children were involved in Green Cover either full or part time, but the seed business quickly outgrew the family. Green Cover began hiring outside of the family and now has more than 30 employees—a significant achievement for the area they operate in.

“We decided to go the route of starting the business rather than trying to find another 3,000 acres to farm,” joked Keith, reflecting on how he got the next generation involved in the business. “Initially, all we did was take orders, then had someone else mix the seeds together. We sold enough of these mixes for about 1,000 acres. So, pretty humble beginnings. From there, we bought our own mixer, started buying and mixing individual seeds ourselves and that’s how Green Cover began.”



From the 1,000 acres in those early years, we’ve grown to where we’re moving enough seed out the door the past couple of years to cover more than one million acres.

—DAVID NELSEN
CEO



COMMITTED TO SPREADING THE WORD

The switch from single- to multi-species cover crops comes with a learning curve. Green Cover has always understood that education was vital to helping producers succeed, and in the early days, most of the company’s marketing budget was dedicated to events and other educational activities.

With the emergence of YouTube and other social media channels, the company relies more on technology to help spread the word about the importance of soil health, with over 500,000 YouTube views just last year. “I’m currently putting a talk together about cover crop and soil health economics,” said Keith. “Specifically, how to put a monetary value on better water infiltration, less soil erosion and increased soil organic matter.”





REGENERATE THEN SUSTAIN.

Part of the educational process involves carefully defining terms. For example, when talking about soil health, the company stresses that regeneration needs to happen before sustainability can occur.

“The word “regenerative” is about building back rather than just holding steady with what you have,” said Keith. “Either term can work. Sustainable essentially means we’re protecting what we have for the long haul, and, in a lot of scenarios, that is the appropriate term. But when we’ve lost 50% or more of our topsoil to erosion, we need to rebuild, then sustain. That’s why regenerative has become a more popular term for us and many others.”



MORE THAN JUST FINANCIAL SUPPORT.

The brothers credit their financial team at Farm Credit with helping to build Green Cover.

“In addition to financial resources, they have also helped us make connections with those who specialize in legal advice, accounting and insurance specifically for agribusinesses. When this all started, using the same services as for the farming operation might have been sufficient, but growth and scale required access to a different level of experience and perspective.”

—KEITH BERNs, CO-OWNER / SALES AND MARKETING MANAGER

“Our rep with Farm Credit Services of America is always on our list for emailing a quick question. They also help make introductions to other companies that aren’t necessarily competition but are doing enough similar things,” added Nelsen. “They’re like, ‘Hey, you should go talk to these guys because you could probably learn from what they’ve done here.’ And they’re usually right.”

From its humble beginnings to a multi-generational business that helps improve the soil health of millions of acres each year, Green Cover continues to make a difference in regenerative **and** sustainable agriculture.



SOUTH FLAT LAND AND LIVESTOCK/LUNGREN FAMILY CATTLE FOUR GENERATIONS OF FORWARD THINKING.

Vance and Clint Lungren run two separate businesses from their base of operations in Worland, Wyoming: Lungren Family Cattle and the South Flat Land and Livestock Company.



We're the fourth generation here. Our great-grandfather Adam started the ranch, and it continued as Lungren Brothers until about 25 years ago, when we reorganized as a partnership that included our grandfather, father and the two of us.

—VANCE LUNGREN
OWNER AND FARMER



The farming side is the South Flat Land and Livestock Company, and the cattle operation is Lungren Family Cattle.

"It's been a good blend to have both cow-calf and farming operations," added Clint.





SUGAR BEETS AND SUSTAINABILITY.

The Lungren land was owned originally by the Holly Sugar Company, now Wyoming Sugar. Sugar beets remain the primary crop, along with several specialty crops, including malt barley and alfalfa for seed.

Sugar beets are a water-intensive crop, and in the area where the Lungren's farm, less than 10 inches of rain falls most years. Irrigation is critical to their success. Their focus is on the best and smartest use of irrigation for their operation.

"We originally used flood irrigation primarily," said Vance. "That limits what tillage and pest management changes you can make because you still have that water running down the furrow and any tracks within your field—or changes in planting—can interrupt that irrigation."



We embarked on an expensive journey, but at the same time, we were seeing the rewards pretty rapidly from that change.

—CLINT LUNGREN, OWNER AND FARMER



Between 2004 to 2019, they moved to sprinkler irrigation with the help of cost share, putting in an average of

2 SPRINKLERS PER YEAR AND THEY IMMEDIATELY SAW EFFICIENCIES IN DECREASED MANPOWER AND INCREASED YIELDS.





This made strip tillage more of a possibility—and eventually, a reality on their land. But getting there had its challenges. They started dabbling in strip till before they had GPS on the implement itself, which made it extremely hard for the planter to follow the strip tiller.

“The first year, the planter made squiggly rows falling from one side to the other side of the strip-tilled zone,” said Clint. “I had to have my nephew, Kaden, steer the tractor for me because I was so consumed with looking behind and steering the actual digger to keep it following the squiggly planted beet rows.”

The solution: Equip both planter and strip tiller with steerable disks hooked to GPS to independently steer itself and hold true to a GPS line.

“What some people don’t realize these days is that strip tillage became an option thanks to a lot of other practices and changes that occurred prior. I think it’s important to remember what made strip tillage possible in the first place.”

—VANCE LUNGREN, OWNER AND FARMER

GMO traits, newer seed treatments and GPS systems had to come together to make strip tillage, which South Flat began to employ in earnest around 2008, both practical and economically viable.

“We were looking at all these opportunities to do away with the different passes we had on the field and to maybe think about limiting our tillage,” said Vance. “Others were also dabbling in strip till back then. But we were definitely on the front end in our area.”

THE STRIP TILLAGE STORY.

“One of the primary reasons we were driven to strip tillage at the very beginning is that we have some sandy fields,” added Clint. “If you work those using traditional practices, it just turns them into a kind of a fine powder and that sand blows terribly in the spring.”

“With strip tillage, we’re mostly following barley stubble, which holds the ground from blowing. That’s where strip tillage really shines for us—not to mention all the fuel savings from eliminating as many as six passes across the fields.”

—CLINT LUNGREN, OWNER AND FARMER





COWS, CALVES AND SUSTAINABILITY.



The combination of row-crop and cow-calf operations has proven important as well. Their cows, for example, convert and redeposit any remaining crop residue, as fertilizer.



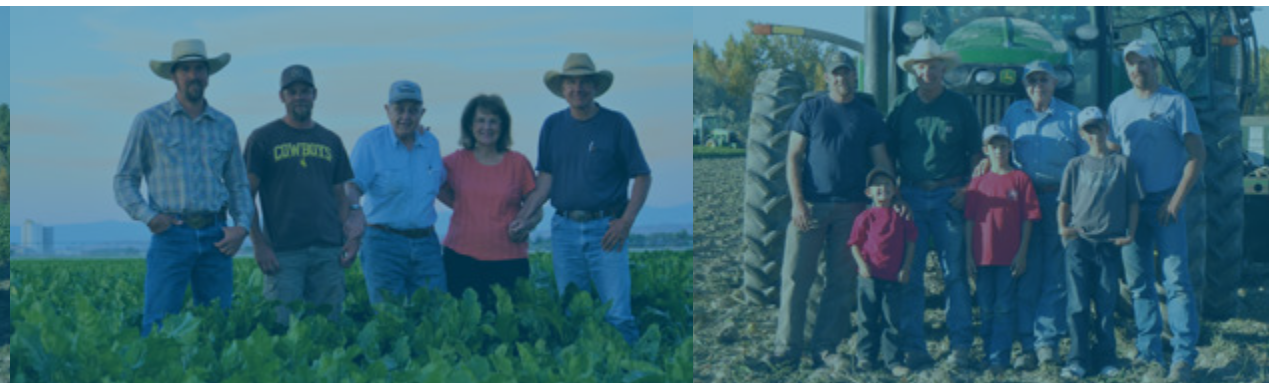
I don't think you see row-crop farms near cow-calf operations all that often and it lends itself to more than a few advantages.

—CLINT LUNGREN, OWNER AND FARMER

“We’re about to trail the cows again this year from the rangeland to the farmland pasture—and we specifically set aside fields, plant crops and organize crop rotation so those cattle can graze on crop residues all winter,” said Vance. “Then, when we’re ready to start farming again, those cattle go back out to the rangeland.”

Another part of their sustainability efforts is the grazing management program they put together with the Bureau of Land Management (BLM). About half of the acreage on which they run cattle is public land. Adhering to the BLM’s grazing strategies has worked well for them.

“Some people think the BLM can be too conservative, but that has not been the case for us,” said Clint. “We’ve gone through some pretty serious drought conditions here and haven’t had to cut numbers during those stretches.”





UNIQUE, SEAMLESS OWNERSHIP TRANSITION.

Economic sustainability is critical as a fourth-generation operation intent on giving future generations a viable way of life. For the Lungrens, that means applying lessons learned from their grandfather.

“We had a very special grandfather who had a desire to do a seamless ownership transition,” said Vance. “He just wanted this place to be sustainable—and he saw something in Clint and me that made him willing to basically do a generational skip to get us some ownership sooner rather than later.”



We’ve just seen multiple generations before us do the same—and we’re not going to be the ones to let it fall through the cracks.

—CLINT LUNGREN, OWNER AND FARMER



From forward-thinking past generations to forward-thinking approaches to water use and the land, South Flat Land and Livestock, together with Lungren Family Cattle, are a case study in sustainable agriculture.



SUSTAINABILITY: WHERE WE FIT IN

PARALLEL PATHS: ADVANCING SUSTAINABILITY

STEP BY STEP: CUSTOMER-OWNERS

VERSOVA

ROADMAN FARMS

GREEN COVER

LUNGREN LAND AND CATTLE CO.

G&W PORK

FLYING W RANCH

G&W PORK

USING RESEARCH AND REPORTING TO GET THE MOST FROM PORK PRODUCTION.

Research has long supported the nutritional value of pork. But it has taken producers like Al Wulfekuhle to start providing answers to consumer questions about the environmental impact of eating pork. Wulfekuhle is an Iowa producer, a member of the National Pork Board and an early participant in the Board's sustainability studies. He started G&W Pork with one of his employees in 1989. Today, the operation raises

50,000 PIGS  EACH YEAR, FARROW TO FINISH, AND GROWS 850 ACRES  OF CORN AND SOYBEANS.

The entire business operates with a longstanding philosophy that has had practical application for many past and present employees of G&W Pork. "We want them to be successful in their lives. Not just in their work lives, but their total lives. It has always been a priority. If we can help an employee find a better place to live or help them buy a piece of ground or help them get started in agriculture, that's a priority. It's definitely a feel-good thing for me—and we've had a lot of success with that."



I think what sets us apart is we try really hard to help people. We help employees get started in farming by helping them buy or rent farm ground and sharing equipment.

—AL WULFEKUHLE
OWNER AND PRODUCER





LONGSTANDING PHILOSOPHY, FAR- REACHING IMPACT.

Wulfekuhle also looks beyond his immediate circle to continually assess the overall impact of the operation on others. This includes the consumers who ultimately enjoy the food he helps put on their tables. “We know (pork is) good for human nutrition,” said Wulfekuhle. “We have all the research to back that pork is one of the most nutritious products that you can feed your family. It’s high in vitamins, minerals and protein. It’s good for child development as it relates to bone structure and muscle mass. And it’s good for cognitive health, so it also benefits the elderly.”

Increasingly, consumers also want assurances that the pork they buy is produced sustainably. When the National Pork Board sought volunteers to participate in a project measuring environmental sustainability and carbon footprints at the operation level, G&W Pork signed up.

“My belief is that pig production is very sustainable, and the results of the sustainability study showed me that our operation is sustainable. With the practices that we’re doing, our farm is carbon-neutral—and that’s rewarding.”

—AL WULFEKUHLE, OWNER AND PRODUCER

WHY RESEARCH MATTERS AT NATIONAL PORK BOARD

Wulfekuhle stressed that research must back anything done at the National Pork Board (NPB), which served as the driving motivation for asking farms to sign up to have their operations evaluated.

“Understanding what can be improved can make a farm even more sustainable,” said Wulfekuhle. “With research, we know that we use a lot less feed and water for a pound of pork and have smaller carbon footprints than 50 years ago.”

“We know that it’s because of improved genetics, nutrition, management and facilities. It’s about making everything more efficient.”

—AL WULFEKUHLE, OWNER AND PRODUCER

For Wulfekuhle, the next logical step for the NPB is to provide similar proof points related to the sustainability of the overall agricultural industry. Consumers are demanding greater transparency and accountability from the entire industry. Knowledge also supports long-term viability by helping producers understand where gains can be made through improvement.





USING REPORTING TO IMPROVE OPERATIONS.

“The sustainability assessment goes into everything, from how you grow your crops to how you raise your animals to your impact on the community,” said Wulfekuhle. For example, data from 66 pork producers in 2021 showed that manure applied to 31,244 acres saved producers an average of \$130 per acre. NPB also found that practices such as no-till and cover cropping helped to sequester carbon emissions at a rate equivalent to 7,761 fewer cars on the road for a year and prevent 272 tons of nitrogen and 44 tons of phosphorous from being lost to leaching or runoff. Using information from the sustainability assessment has shown G&W Pork how it’s doing and where progress can be made.



For me, it’s all about improvement and taking these tools that we have to get better. Reporting is just another tool to figure out where you’re at and how you can improve.

—AL WULFEKUHL, OWNER AND PRODUCER

G&W Pork knows that more than half of its carbon footprint comes from the crops it grows as feed. A focus on soil health has helped neutralize the operation’s carbon impact. To that end, Wulfekuhle takes soil health seriously, using no-till and strip-till practices to maximize yields with minimum resources. Wulfekuhle also is on the NPB’s soil health task force, which is looking into many different factors impacting soil health—everything from the use of cover crops to how manure increases organic matter and the soil’s water-holding capacity.

“Soil’s a living organism that needs to be fed. Manure does a very good job of that,” said Wulfekuhle. “Cover crops help hold those nutrients in place, stopping soil erosion and loosening the soil thanks to those roots that go deep into it. Then the roots help give back the organic matter as they decay, and that organic matter actually builds your soil even more.”

While “people from the beginning of time have used manure to grow crops,” said Wulfekuhle, growers and consumers need facts. “Everything we do at National Pork Board has to be backed by research, so we’re doing that to prove what we already know—that manure, when used at appropriate rates, is good for your soil.”





THE ULTIMATE GOAL—AND REWARD.

When it comes to the ultimate goal, Wulfekuhle says it all comes down to creating something better than what you started with.

“When I look at sustainability, it’s about making things better,” said Wulfekuhle. “It’s about taking something, whether it’s a piece of ground or a hog operation or even the people that you work with and making everything better than when you started. That’s been my goal in life.”



We care about our animals and do everything to keep them healthy and keep their environment where it should be. It’s the same with our crops. We try to do what we can to take care of the soil to prevent its erosion and improve its health.

—AL WULFEKUHLE, OWNER AND PRODUCER

For Al Wulfekuhle and G&W Pork, loving pig production and agriculture also means loving challenges—and loving how each can be turned into an opportunity.



FLYING W RANCH LIFELONG SUSTAINABILITY LEARNERS.

Josh Hoy is a fifth-generation rancher in the Flint Hills of Kansas. His wife, Gwen, also has agricultural roots near the Flint Hills area that go back four generations. Together, they own the Flying W Ranch, a

7,000 ACRE AUDUBON-CERTIFIED BIRD-FRIENDLY OPERATION

that they oversee with an unwavering dedication to grassland stewardship. In all they do, they strive to be intentional about applying knowledge to the management of their sheep, longhorn cattle and land. This commitment is driven by their passion for lifelong learning. “We’re doing continuing education programs all the time,” said Gwen. “We read constantly trying to get better and better.”

ICONIC COUNTRY

The Flying W lies in the middle of old-growth tallgrass prairie. The Hoys consider themselves fortunate to be doing what they love most in an iconic part of the world.

As part of their management practices, they prefer to do all their ranch work on horseback. “In this country, you’d go broke in a hurry trying to use feed trucks and four-wheelers,” said Josh. “My grandfather always said that broke horses make money and broke equipment costs money.”



There’s only about 2 to 4% of old-growth tallgrass prairie left, and we’re right in the middle of it.

—JOSH HOY
OWNER AND RANCHER





EMBRACING ‘THE CHAOS FACTOR’.

They also try to work with nature as much as possible. “We call part of our management theory, ‘the chaos factor,’” said Josh. “Nature has chaos throughout—and if you try to do the same thing year after year, nature doesn’t like that. We try mixing things up all the time, like running cows on some of the grass at certain times and yearlings at other times.”

For the Hoys, embracing ‘the chaos factor’ also means not being overly prescriptive.



Instead of fighting against something, we try to adapt and help nature deal with the problem. Josh and I like to pick and choose from what we’re learning to find what works best for the prairie here—and then we try to go a step or two beyond that.

—GWEN HOY
OWNER AND RANCHER





REBOOTING HERD INSTINCTS.

The Hoys use stockmanship to reboot the herd instincts of their cattle and sheep, adopting practices such as instinctive migratory grazing.

It is an ongoing practice yet to be fully realized. “We don’t feel as though we’ve truly achieved instinctive migratory grazing yet,” said Gwen. “It’s a big endeavor, but we try to implement as much as possible with the tools we have. Our goal is to eventually move our cows back and forth between two separate properties 24 miles apart.”



Part of this rebooting process involves encouraging their animals to browse more. “You need grazers and you need browsers,” said Josh. One of the ways the Hoys have helped encourage this is the use of a technique from stockman Bob Kinford. The Hoys learned from Kinford that herding animals, such as cattle, use their spines to communicate how they want the herd to move. By moving their horses’ spines and their own as they approach the herd, they can easily move the cattle in the direction they need.

“Cows naturally will browse about 20%, but rebooting has gotten our cows to browse much more than that—more like 30-35%.”

—JOSH HOY, OWNER AND RANCHER





DOING RIGHT BY THE LAND.

Their animal management practices are shaped by their commitment to the land itself. Rather than focus on getting as much off the land as possible, “we take some of our grass and let it rest during the growing season,” said Josh. “The way we see it, it’s just harvesting at different times, where you may not be getting the same gains immediately because it’s a different kind of harvesting.”

The Hoys also understand that short-term economic tradeoffs always come into play when talking about sustainability. The Flying W has conservation easements—voluntary, legal agreements that permanently limit uses of the land to protect its conservation values—on all owned and managed land, allowing the Hoys to establish



4,000

RESTORED ACRES OF NATIVE PRAIRIE
OR MANAGED PASTURE.

“We’re working with organizations like The Nature Conservancy and the Ranchland Trust of Kansas,” said Josh. “They’re really working hard to make easements flexible and functional for the families involved—and that’s important because you have to plan for those next generations coming down the road. If you don’t do that, you don’t have anything.”

To address invasive species, the Flying W uses patch burning. The Hoys see it as a powerful management tool that aligns with the chaos factor and continual improvement in their operation. “Historically, they say this country has burned every three to six years for the last 10,000 years,” said Josh. “Almost 80% of those fires occurred in August and September during dry seasons, with lightning being a primary cause.”

Through patch burning, the Flying W reduces invasive species, trees and woody brush. Through trial, the Hoys have learned that burning in the fall yields the best results for all involved, including the birds as they are not laying in the fall.

PAYING LIFELONG LEARNINGS FORWARD

As lifelong learners, the Hoys are passionate about sharing their experiences. Prior to the pandemic, agritourism played a role in their operation, with the Hoys welcoming a steady stream of guests interested in sustainable ranching. They’re now considering other ways, including an internship program, to spread the word about grassland stewardship and sustainable ranching.



There are ways we could make much more money by being more extractive of the land. But we’re still building wealth—in our soil health, in our ecological health and in our wildlife.

—JOSH HOY, OWNER AND RANCHER

The Hoys have a desire to keep everything as simple as possible and laid out in a way that will make sense to future generations and allow those that come after them to “embrace the chaos” in similar ways.

LOOKING FORWARD TO A MORE SUSTAINABLE FUTURE.

We'd like to close our second annual sustainability report with a thank you to all those who so generously shared their insights and stories. We celebrate their successes. We also are learning from their journeys.

As financial cooperatives, we work to be responsive to the credit and risk management needs of our customer-owners. This includes a long history of offering specialized loan products and programs to fill gaps in the marketplace. When we launched our sustainability program, we made some initial assumptions about how best to educate, enable and engage customer-owners. Some have been supplanted with new ideas as the sustainability space evolves and producers come to us with specific opportunities. The education and services we are developing align with our commitment to help customers achieve long-term economic sustainability.

We also continue to expand our outreach to organizations and potential partners who share our interests, including the development of markets for sustainably-produced products. We remain involved in efforts that could help customers participate in new climate-smart programs. These efforts are focused on voluntary, incentive-based programs through established organizations. And, just as importantly, we are focused on what we, as your financial cooperatives, can do better.

In the end, it's steps both big and small that will ultimately make us and our customer-owners more resilient and sustainable.



2023 SUSTAINABILITY REPORT

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