Statement of John Reifsteck Chairman of the Board and President, GROWMARK, Inc.



On Behalf of The National Council of Farmer Cooperatives



Farmers and Foresters: Opportunities to Lead in Tackling Climate Change U.S. Senate Committee on Agriculture, Nutrition, & Forestry

March 11, 2021

Chairwoman Stabenow, Ranking Member Boozman and members of the Committee, thank you for holding today's hearing and inviting me to testify on the opportunities for farmers and foresters to be leaders in tackling climate change. I am John Reifsteck, a grain farmer from Champaign County in central Illinois and Chairman of the Board and President of GROWMARK, Inc. I appreciate the opportunity to testify before you today on behalf of GROWMARK, the National Council of Farmer Cooperatives and the Food and Agriculture Climate Alliance (FACA).

I am blessed to live in the farmhouse my grandfather built 107 years ago. The farm has sustained three generations of my family. My father and grandfather were good farmers, but the tools and practices they used on our farm would not be good enough to meet the needs of our country today. Instead, each generation of my family used new technologies to build on the successes of the past. GPS, automatic steering and biotechnology are examples of new tools available today that future generations will use to build a better agriculture. Future progress will increasingly rely on informatics—the collection and interpretation of data—of which I will highlight the importance of throughout my testimony.

#### **Climate Resiliency Efforts on My Farm**

Throughout my lifetime of farming, I constantly have sought out ways to reduce my environmental impact—it is good for the environment, it is good for my farm and it is the right thing to do.

I have been using climate-friendly practices on my farm since the late 1980s. At that time, I was working with Illini FS, a cooperative within the GROWMARK system, when farmers were eager to try new conservation practices. Producers like me quickly realized that these new practices were too expensive and too complicated to do on our own and we needed the right partner to help get the job done. My co-op was that ideal partner to offer the expertise and custom services at the time, and they still are today. They know me, they know my farm and they have my best interests in mind. Their precision agriculture services have evolved right along with advancements in technology to offer custom data gathering, field mapping, soil testing and so much more, and they continue to evolve.

I know that atmospheric greenhouse gasses are increasing—the data collected from my farm over the past 25 years tells me so. I believe the timing is right for all industries, including agriculture, to come together and find solutions that will sustain our way of life for generations to come.

In 1996, I entered into a collaborative research agreement with the National Oceanic and Atmospheric Administration (NOAA). Our initial goal was simple—to conduct basic research to better understand how my farming practices interact with the environment. The environment is always impacted when growing crops—that is not a bad thing—that is how food is produced. But we must do it responsibly using the best information available, which is why agricultural research is so important.

Over time, we gained a better understanding of the seasonal and annual carbon and water budgets of common farm management systems. We learned how to maximize carbon sequestration—that simple practices such as reduced tillage and precision agriculture techniques can result in storing more carbon in our fields over long periods of time. These insights help us understand how to better manage carbon and water to insure long-term sustainability. I believe there are additional practices that farmers can adopt, with good information and the correct incentives, that will result in even better environmental outcomes.

Understanding the mechanisms of crop and atmosphere interaction improves NOAA's day-today and seasonal predictions of temperature and precipitation, and helps explain the impact of extreme weather events on plant growth and yield. This information will aid in identifying opportunities to enhance crop resilience.

The amount of data that has been collaboratively gathered on my farm is astonishing—NOAA estimates that over the last 25 years, 8 billion data points have been collected. The type of data collected spans from the enzyme to the ecosystem. For example, during harvest I collect yield, crop moisture and GPS location data at every second of the harvest. Each year, 750 plant samples are analyzed for 12 characteristics and the same number of soil samples are analyzed for 20 different attributes. Continuous measurements are taken of nutrients, carbon, water and energy entering and leaving the field. This data is used to understand basic agronomy principles, physiology aspects of plants, opportunities for crop improvement, responses of crops to the environment and ecosystem services. Data collected has been used in over 385 publications by researchers around the world. NOAA claims my farm is the "Most Studied Agricultural Field on the Planet."

The location of my farm is in close proximity to the University of Illinois Urbana-Champaign, providing the opportunity to compare the impact of farming practices on my operation to various practices on the university's agricultural research farms. This has ultimately led to strong collaborations and novel insights when comparing data.

One major result from the research conducted on my farm proves how tillage impacts carbon storage (or release) in midwestern fields. The study compared the conservation tillage used on my farm with conventional tillage used on one of the university's research farms. The results were staggering. There was a difference of 3,000 lbs of carbon per acre per year—my farm **sequestered** 1,000 lbs of carbon per acre per year on average, while the research farm **released** nearly 2,000 lbs of carbon per acre per year. More information about this collaborative research can be found in the addendum.

In addition to the NOAA research station data collected on my farm, I collect my own information with technology that is integrated into my equipment. With this technology, data is instantaneously gathered using GPS systems and other insights from my machinery, uploaded to the cloud and shared with several trusted partners of my choosing which analyze the data and provide feedback on how I can farm more efficiently. This information allows me to accurately apply the most appropriate products using the most effective techniques to achieve the best results for my crops and the environment.

This year, I will once again be partnering with GROWMARK to use a new service launched in 2020 called, *myFS Solution Center*. The new online platform allows FS System team members to collaborate directly and instantly with customers on every aspect of their operation from order fulfillment to product recommendations. The *myFS* platform will allow the co-op to help customers make more informed and timely choices by relying on applied research to deliver analytics from individual fields. The data is used to develop fertility plans focused on minimizing environmental impact, optimizing nutrient utilization and maximizing harvest yield. *myFS* also pushes out alerts on everything from potential pest outbreaks to real-time application and delivery status for customers.

More than 30 FS System cooperatives (GROWMARK members) have already launched *myFS Solution Center*, with the remaining cooperatives gearing up for a launch in the coming weeks. I look forward to integrating this platform into the suite of data services I currently use to optimize my overall farming operation.

#### **GROWMARK** Sustainability

Over the years, our farmers have lived the concept of sustainability with operations that have thrived through multiple generations. As leaders in the industry, co-ops and their farmermembers do not always get the recognition they deserve for the practices they already have in place, but they continue to be committed to improving practices and production to reduce their impact on the environment. This expertise in sustaining a uniquely American way of life has become more valuable than ever as supply chain partners field questions from consumers who are increasingly interested in reducing impacts on the environment, as the United States enters into climate agreements with global partners to reduce GHG emissions and as the data and technologies to help reduce emissions and sequester carbon become clearer and more accessible. How we manage the convergence of these factors will shape our effectiveness in mitigating our collective impact on the climate.

GROWMARK's *endure* sustainability platform guides our cooperative's operation from sourcing supplies farmers need for their crops, energy to run their farms and recognition for the practices our crop specialists and farmers take when implementing their crop plan. The *endure* sustainability platform involves those activities, processes, products and services that endure over time and deliver benefits that are social, environmental and economic. The *endure* program is a holistic approach to supporting the profitability and sustainability of the GROWMARK System, our members and agriculture.

Each business unit within GROWMARK has a sustainability committee representative and they meet quarterly to inventory actions that can be highlighted, replicated and optimized across the entire GROWMARK system. Examples include recognizing farmers who implement outstanding sustainable practices on their land with an *enduring Farm Award* from our agronomy team. Additionally, our crop specialists work closely with their farmer customers to develop crop nutrient plans which include the 4R Nutrient Stewardship Program—an integral part of the planning process. Crop specialists are frequently recognized for their agronomy expertise and leadership with a *4R Advocate Award*.

Moving supplies for planting crops, plant care and fall harvest after crop production is regularly analyzed for efficiency by our Logistics Division. Efficiency gains in reducing miles traveled, energy expended, and resources used to make product moves are sustainable actions and are a main focus of our Energy Division as they develop fuels that achieve more miles and hours of use per gallon. These actions reduce GHG emissions by reducing energy consumption from trucks and farm equipment. Our Structures Division analyses where renewable energy can be utilized to run facilities more efficiently. Recently, a solar field was installed on-site at our five-acre warehouse that generates approximately 700,000 kWh of energy annually. Solar energy will play an important role in GROWMARK's system-wide energy efficiency planning.

Cooperatives also have a long track record of community investment and involvement, giving resources, time, and expertise back to the communities in which they live and work. For example, GROWMARK participates in local watershed projects to improve water quality and conservation and helps FFA chapters plant pollinator plots to enhance butterfly and bee populations. We are proud of our *enduring Commitment* program that provides contributions to charitable organizations within the community. We support employee involvement in charitable programs through employee volunteer time-off in the GRO Network of volunteering for community improvement projects. These collective actions help improve life on our farms and in our communities.

#### **<u>Climate Policy Recommendations for Agriculture</u>**

The National Council of Farmer Cooperatives is a Founding Member and co-chair of the Food and Agriculture Climate Alliance. Over the past 12 months, the Alliance has brought together more than 60 state and national organizations representing a diverse cross-sector of the food and agricultural supply chain in support of more than 40 climate policy recommendations.

FACA's policy recommendations support voluntary, market- and incentive-based policies, advance science-based outcomes and promote resilience, and help rural economies better adapt to climate change. These policies were created with an overarching goal to do no harm, meaning the policies are thoughtfully crafted, informed by broader potential consequences and tradeoffs, and account for inequities. There is also an underlying focus on the critical need for broadband access in rural America. Without a strong, reliable internet connection, farmers cannot obtain current information, utilize precision agricultural practices, record, track and analyze real-time data or meaningfully document progress on their farms. These capabilities are necessary to validate, verify and account for the outcomes of climate-smart practices.

There are several proposals highlighted below and included within FACA's recommendations that, if adopted, would have a positive impact on my operation and provide opportunities for farmers and their cooperatives to build stronger partnerships around climate-smart production strategies.

#### Support Passage of the Growing Climate Solutions Act

I commend the work of Chairwoman Stabenow and Senator Braun in co-sponsoring the *Growing Climate Solutions Act* to help break down barriers and provide more certainty for farmers,

ranchers and forest owners who want to participate in carbon markets. If farmers are to be part of solving climate challenges we need to rely on proven science, accurate data and standardization to help us get there—this bill is an important step in that direction.

The *Growing Climate Solutions Act* highlights several barriers to entry for farmers and foresters wanting to earn income from climate-smart production practices. One such barrier is uncertainty about how to implement projects or navigate carbon markets. Another barrier is a lack of knowledge regarding which partners are trustworthy and have the expertise about how individual farmers and foresters could benefit from participation in these markets. For these reasons, there has not been widespread participation thus far.

This is where I see a valuable role for farmer co-ops. The established relationship between co-op and farmer can foster the adoption of these climate-smart practices. Co-ops have the farmer's best interest at heart and are the right partners to help determine the most effective, environmentally conscious practices for each farm.

### Increase Funding for Research

The research conducted on my farm for the past 25 years demonstrates how critical it is to develop strong partnerships between private landowners, government agencies, land grant universities and organizations dedicated to helping farmers. The results from research like this spurs innovation to meet increasing global demands of food, biofuels, fiber, feed and other agricultural products. Extensive knowledge can be obtained from experimental research plots at public universities. However, they do not fully depict real-world variables such as the scale and management of privately owned agricultural lands.

I feel fortunate to have had this much research conducted on my operation throughout my farming career. We need more testing sites like mine across the country, especially in rural America, but uncertainty surrounding ongoing funding is always an issue. In fact, the NOAA research project on my farm was always "temporary" until long-term funding finally became available just recently. This research needs to be ongoing. The absence of this necessary infrastructure and data will prove to be exceedingly harmful. Not only would the quality of farmer decision-making be imparied to the detriment of their performance and bottom lines, but the ability to model and forecast weather events in rural areas would be seriously degraded due to the lack of actual weather data from these parts of the United States. In order for farmers to play an active role to meaningfully move the needle on climate mitigation, producers will first require reliable data that is field and practice-generated over time—like the data from my farm—rather than modeled.

FACA's policy recommendations encourage the United States to make a stronger commitment to agricultural and forestry research to help provide farmers, ranchers and forest owners with the tools they need to adapt, mitigate and become more resilient to climate change. These recommendations include directing USDA's Agricultural Research Service to develop protocols for climate research trials, providing USDA's Natural Resources Conservation (NRCS) funding to expand the number of soil sampling reference sites and formally codifying USDA's Climate Hubs, just to name a few.

### Strengthen and Focus USDA NRCS Programs

NRCS programs provide critical on-the-ground support to help farmers and ranchers maintain healthy, productive lands and overcome administrative barriers to adopting practices that conserve natural resources. However, more technical assistance, especially that which is focused on climate resiliency, is needed throughout the countryside. Therefore, FACA recommends providing additional funding for a variety of NRCS initiatives to meet program needs and support programs that focus on GHG emissions reductions, adaption or resilience, and soil health efforts, as well as technical assistance for climate stewardship practices. Furthermore, NRCS should streamline certified crop advisers' ability to become technical service providers to grow the pool of trusted partners offering technical assistance and on-the-ground support to farmers.

Often, producers choose not to utilize assistance from NRCS because of cumbersome and lengthy contract approval processes. With more funding, NRCS would have the resources it needs to streamline the process to better assist producers in obtaining the cost-share benefits and expertise needed to adopt practices that improve climate resiliency.

### Improve USDA's Rural Energy for America Program

USDA's Rural Energy for America Program (REAP) is an important funding source for producers and rural small businesses needing assistance to install renewable energy systems or make energy efficiency improvements on their operations. However, REAP is an oversubscribed program and in critical need of additional funding to meet demand.

Additionally, I believe the reach of the program could be broadened and more effective if farmer-owned cooperatives, similar to rural small businesses, were eligible for REAP benefits enabling co-ops to partner with farmers and ranchers on energy efficiency and renewable energy projects. Given the strong network of producers within a co-op's membership, these projects could be scaled to encompass several farms to increase the effectiveness and impact of energy projects.

Expanding REAP's eligible entities to include farmer co-ops would also facilitate wider adoption of anaerobic digesters which are highly effective tools in reducing, destroying and converting methane and nitrous oxide emissions from livestock manure and other waste. For example, a community digester operated by the co-op could pool waste from several members' operations or a co-op could help in the daily tasks of running and monitoring the digester on a member's farm so the producer can focus on their farming operation. Allowing co-ops to be a trusted partner with producers in utilizing REAP benefits would break down several barriers currently preventing producers from installing this highly effective technology on their farms.

#### **Recognize Early Adopters**

As noted above, I have been using climate-smart practices such as conservation tillage and precision agriculture on my operation since the late 1980s. Those practices have proven benefits to my soil including increased sequestered carbon. There are many producers just like me who were early adopters of climate-smart practices. FACA recommends making available a one-time

benefit acknowledging these producers' voluntary investment and commitment of resources to innovative practices while encouraging farmers to continue adopting additional climate-smart practices.

#### **Conclusion**

In conclusion, I would like to add one observation as someone who has been fortunate enough to attend farmer meetings across the Midwest. As recently as a few years ago, climate change was not an issue that producers talked about among themselves. If they did, it usually was worrying about the added costs regulations could impose. Today, it is a popular topic discussed at these meetings.

Producers know that a changing environment will impact their operations and will require a sharpened focus on climate resiliency. At the same time, climate-friendly technologies and practices have become more widespread. And finally, there is a growing realization that done correctly, public policies that promote these practices can also help boost farm income while making a tremendous contribution to reducing GHG emissions.

I believe that co-ops like GROWMARK and other NCFC members will be essential for making this vision a reality. We work with our farmer-owners on a daily basis to provide innovative technologies, advice, services and supplies that are customized to fit each members' production needs. As Congress moves forward with climate change legislation, recognizing that farmer co-ops can help bridge the gap to the producer and magnify the impact of climate-friendly policies should form an important part of any final proposal.

#### About the Food and Agriculture Climate Alliance

The Food and Agriculture Climate Alliance (FACA) consists of organizations representing farmers, ranchers, forest owners, agribusinesses, manufacturers, the food and innovation sector, state governments, sportsmen and environmental advocates. These groups have broken through historical barriers to develop and promote shared climate policy priorities across the entire agriculture, food and forestry value chains.

NCFC is a Founding Member and co-chair of the Alliance alongside the American Farm Bureau Federation, Environmental Defense Fund and the National Farmers Union.

#### About the National Council of Farmer Cooperatives

Since 1929, NCFC has been the voice of America's farmer cooperatives. NCFC values farmer ownership and control in the production and distribution chain, the economic viability of farmers and the businesses they own, and vibrant rural communities. We have an extremely diverse membership, which we view as one of our sources of strength—our members span the country, supply nearly every agricultural input imaginable, provide credit and related financial services (including export financing), and market a wide range of commodities and value-added products.

American agriculture is a modern-day success story. America's farmers produce the world's safest, most abundant food supply for consumers at prices far lower than the world

average. Cooperatives differ from other businesses because they are member-owned and are operated for the shared benefit of their members.

Farmer cooperatives enhance competition in the agricultural marketplace by acting as bargaining agents for their members' products, providing market intelligence and pricing information, providing competitively priced farming supplies and vertically integrating their members' production and processing. There are nearly 2,000 farmer cooperatives across the U.S. and earnings from their activities (known as patronage) are returned to their farmer-members, helping improve their members' income from the marketplace.

#### About the GROWMARK System

GROWMARK is an agricultural cooperative serving almost 400,000 customers across North America, providing agronomy, energy, facility engineering and construction, and logistics products and services, as well as grain marketing and risk management services. Headquartered in Bloomington, Illinois, GROWMARK owns the FS trademark, which is used by member cooperatives. GROWMARK also owns and operates SEEDWAY, the largest full-line seed company in the United States. More information is available at growmark.com.

Among the many services provided to members, GROWMARK's Agronomy division offers all of the products and services an agricultural retailer needs to provide for farmer success including a comprehensive biotech seed line-up. GROWMARK's complete offering of plant food products, adjuvants, surfactants and crop protection products ensure superior yields and acre for acre productivity.

The GROWMARK System provides services that span the supply chain from providing the ideal seed varieties for planting, caring for plants during the growing season, collecting and storing grain after harvest, to selling the product at the best market price and shipping it across North America.

We offer a variety of transportation options to ensure our clients can provide their customers with the right inputs at the right time. Each year our Logistics Division arranges nearly 150,000 truckloads of product and our Traffic Department coordinates more than 1 million tons of rail and barge shipments. To improve efficiency, we distribute products on regular routes from three primary warehouses—Alpha and Nashville, Illinois and Kitchener, Ontario. Each facility is ISO 9001:2008 compliant, signifying quality control from receipt of the product to its final delivery.

GROWMARK is a full-service agricultural cooperative focused on developing and delivering leading-edge products, services, knowledge and technology through high-level expertise and strategic assets.

## The Model Private-Public Relationship

Partnerships between private landowners and public researchers is critical to meet increasing global demands for food, biofuel, fiber, feed, and all other agricultural uses



**Reifsteck Farms** 

Replication of instrumentation from Reifsteck Farm to two additional farms is ongoing, expanding research to include cover crops and conventional tillage on private lands

Extensive knowledge is obtained from experimental plots at research institutions, but research plots do not represent the scale and management of private landowners (see photos below)

The University of Illinois Energy Farm



# **The Most Studied Agricultural Field on the Planet** A Mid-Western Corn/Soybean Minimum-Till System

## **John Reifsteck**

Land Owner and Land Manager

### **Collaborating Research Investigators** Tilden P. Meyers<sup>1</sup>, Carl Bernacchi<sup>2</sup>, DK Lee<sup>3</sup>

<sup>1</sup>NOAA/OAR, Air Resources Laboratory, Atmospheric Turbulence and Diffusion Division <sup>2</sup>Global Change and Photosynthesis Research Unit, Agricultural Research Service, USDA <sup>3</sup>Department of Crop Sciences, Univ. of Illinois, Urbana-Champaign



## The Reifsteck Fields: Known Globally as the "Bondville Site"

This field has been studied continually since 1996. Every year:

Yield data is collected every second during harvest

750 plant samples analyzed 12 different ways

750 soil samples analyzed 20 different ways

Continuous measurements of nutrients, carbon, water, energy entering and leaving the field

Over 8 Billion data points from dozens of sensors have been collected since 1996. This Data has been:

Downloaded 1,993 times since 2015

Included in over 385 scientific publications



## How are the data used?

Data is collected from the enzyme to the whole ecosystem. This data has been used to:

Understand basic agronomy

Physiology of the plants

Opportunities for crop improvement

Responses of crops to the environment

Ecosystem services

Data has been linked to local, regional, and global scales using crop and global models as well as pairing results with airborne and satellite measurements







### SYMFONI

A "system of systems" commercial solution of quantifying field-level carbon credit for farmland

PI: Kaiyu Guan (University of Illinois)





## Public-Private Cooperation to Advance Midwestern Agriculture

Proximity of Reifsteck Farms to the University of Illinois Research Farms (top right photo) has led to strong collaboration and novel insights. For example:

Reifsteck Farms provides a "real world" control to compare against USDA and University research plots, such as:

The USDA-operated SoyFACE Global Change Research Facility (Top right photo; https://soyface.illinois.edu/)

The University of Illinois Energy Farm (Bottom Right Photo; http://energyfarm.illinois.edu/)



The University of Illinois Energy Farm, SoyFACE Global Change Research Facility



The University of Illinois Energy Farm

## Key Finding on Carbon and Land Management

One major research result involves how tillage impacts carbon storage (or release) in Midwestern fields



### Results from 25 years of measurements at Reifsteck Farms coupled with 10 years at the University of Illinois Energy Farm

**Convention tillage** results in nearly 2000 lbs of carbon lost per acre per year



**Minimum tillage** results in carbon storage of nearly 1000 lbs of carbon per acre per year





## Goals of Primary Scientific Collaborators\*

## Goal

Understand the seasonal and annual nutrients carbon and water bugets of common farm management systems

## **Potential Outcome**

Improve how carbon and water is optimally managed to ensure long-term agricultural sustainability

## Goal

Understand the physical mechanisms about how crops and the atmosphere interact

### **Potential Outcome**

Improve NOAA's day to day and seasonal predictions of temperature and precipitation

## Goal

Acquire the necessary observations to understand the impact of extreme weather events (droughts, floods, etc) on plant growth and yield

## **Potential Outcome**

Use this information to identify opportunities to enhance crop resilience

### Goal

Establish an experimental observation testbed to explore new measurement platforms.

### **Potential Outcome**

Understanding wide-spread crop behavior across the United States with technology accessible to all land-owners.



## Future Opportunities

Identifying the most promising and sustainable crop and management combinations is critical to meet demands for agriculture

The most focused agricultural experiments in the Midwestern US is limited to only a handful of the dozens of management practices and represents three of the thousands of agricultural fields in the Midwestern US



Reifsteck Farms is the ideal model for private-public partnership with Government and University Research Scientists and local land owners.

For example, establishing research cooperations can lead to understanding of how cover crops (left), conservation tillage (middle) and bioenergy crops (right) can be scaled across US agriculture



### Who has worked at Reifsteck Farms over 25 years?









**Institutes:** Carl R. Woese Institute for Genomic Biology, Center for Advanced Bioenergy and Bioproducts Innovation, Institute for Sustainable Energy and the Environment, National Center for Supercomputing Applications, Illinois State Water Survey

**Departments:** Crop Sciences, Atmospheric Sciences, Plant Biology, Agricultural Engineering, Civil and Environmental Engineering, Natural Resources and Environmental Sciences

### Who has Funded Research at Reifsteck Farms?









### **Project Websites**

https://sustainability.illinois.edu/research/smart-farms-project/ https://soyface.illinois.edu/ https://www.arl.noaa.gov/research/climate/ https://www.ars.usda.gov/midwest-area/urbana-il/global-change-and-photosynthesis-research/ http://energyfarm.illinois.edu/







### JOHN REIFSTECK Chairman of the Board and President

John Reifsteck became Chairman of the Board and President of GROWMARK, Inc. on August 28, 2013. He operates a grain farm in western Champaign County, Illinois. Reifsteck is a graduate of the University of Illinois at Urbana-Champaign where he received a bachelor of science degree in agriculture economics and education.

Reifsteck has served on the GROWMARK Board since 1993, holding leadership roles including Vice-Chairman of the Board and chairman of the Budget/Audit Committee. Throughout his career, Reifsteck has served on the boards of numerous agricultural organizations. He is a past president of the Illini FS Board of Directors and the Champaign County Farm Bureau, and is a current participant in the University of Illinois Chinese Leadership Program. He is a recipient of the University of Illinois 2018 College of Agricultural, Consumer and Environmental Sciences (ACES) Alumni Association Award of Merit. Reifsteck has been honored as Director of the Year by the National Council of Farmer Cooperatives, Master Farmer by *Prairie Farmer* magazine, and Farm Leader of the Year by the Champaign-Urbana *News Gazette.* 

Reifsteck and his wife Nancy have two grown sons and one grandson.