



U.S. DAIRY SUSTAINABILITY REPORT

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DAIRY'S SOCIAL RESPONSIBILITY



DAIRY IS AN ENVIRONMENTAL SOLUTION



DAIRY HELPS PEOPLE AND COMMUNITIES THRIVE

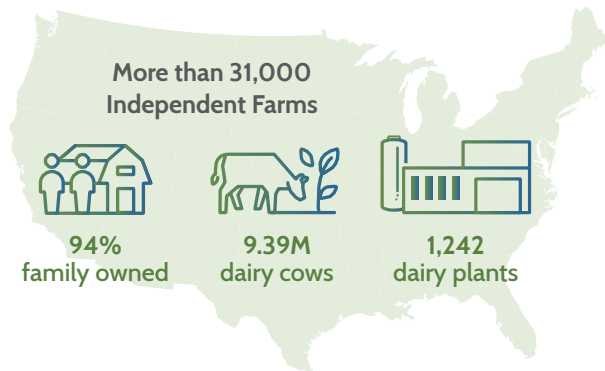
About This Report: The 2020 U.S. Dairy Sustainability Report is the eighth progress report published by the Innovation Center for U.S. Dairy® (Innovation Center). The reporting period covers calendar years 2019 and 2020, except where clearly noted. Refer to the Reporting Information section at the end of this report for detail on the data included. The principles in the Global Reporting Initiative's Sustainability Reporting Standards informed report development. Future reporting is expected to occur biennially.

This report is available at USDairy.com/InnovationCenter. We welcome your feedback on this report and the U.S. dairy industry's sustainability efforts. Please contact us at InnovationCenter@USDairy.com.

U.S. Dairy Snapshot

The U.S. dairy community is highly diverse and strongly aligned around a shared pledge to provide the world responsibly produced dairy foods that nourish people, strengthen communities and foster a sustainable future.

Milk production and processing occurs in all 50 states.¹



223.7B pounds of fluid milk and dairy products were produced from 218.3B pounds of milk in 2019.

Despite the global pandemic, the U.S. supplied the world with sustainably produced, nutrient-rich dairy products, navigating significant supply chain challenges and disruptions, and expanding exports to 16% of U.S. milk solids, an all-time high.²

Accessible and affordable nutrition

Milk, cheese and yogurt are valuable sources of many essential nutrients important to health.

For example, milk provides 13 essential nutrients including protein, calcium, iodine, phosphorus, potassium, selenium, zinc, vitamin A, vitamin D, riboflavin (B2), niacin (B3), pantothenic acid (B5) and cobalamin (B12).³

Dairy foods supply 52% of the calcium and 17% of the protein in the average American diet.⁴

3 servings of milk only costs about 60 cents, making milk one of the most economical sources of nutrition.⁵

[LEARN MORE](#)

The dairy industry delivers strong economic benefits.

According to IDFA's Dairy Delivers® study:⁶

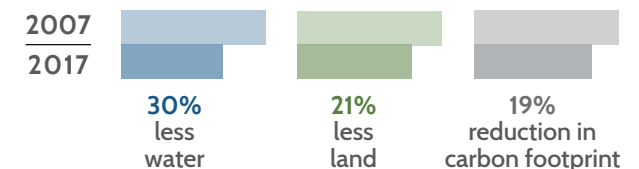


\$752.93B total economic impact contributing 3.5% of U.S. gross domestic product.

Dairy's environmental footprint continues to improve.

Global leadership in efficiency:⁷ According to a UN FAO study, dairy farming in North America has the lowest greenhouse gas emissions intensity of any region in the world. During the 2010–2015 study period, North America was the only region to lower both emissions intensity and absolute emissions.

From 2007 to 2017, the environmental impacts of producing a gallon of milk in the U.S. decreased:⁸



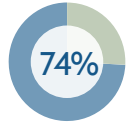
Contributions to the UN Sustainable Development Goals

While dairy directly or indirectly connects to all 17 goals, the U.S. dairy community is uniquely qualified to contribute to the achievement of the following SDGs:

Sources: See endnotes.



2019–2020 Highlights



U.S. Dairy Stewardship Commitment adopters represent nearly 3/4 of U.S. milk production, a 23%↑ increase from 2018



Industry-wide 2050 Environmental Stewardship Goals set to collectively achieve carbon neutrality or better, optimize water usage and improve water quality



Launched in 2020 to accelerate on farm voluntary action toward the 2050 goals



In 2020, U.S. food banks in the Feeding America network distributed 469M pounds of fresh milk and dairy foods, a 33%↑ increase over 2019



Dairy Sustainability Alliance membership increased 25% in 2019 and 2020, totaling 140 companies

\$10 million

Nestlé makes first corporate partner pledge to the U.S. Dairy Net Zero Initiative, paving the way for more partners



New industry-wide initiative builds on extensive best practices training success to promote a culture of food safety in processing plants.



Innovation Center Food Security Task Force formed to increase reliable access to nutritious dairy



New Processor Stewardship Reporting Tool piloted in 2019, with formal launch in 2020



GHG Inventory Guidance earned “Built on GHG Protocol” mark of endorsement from WRI



Version 4 of FARM Animal Care released and verified through ISO Technical Specification requirements



New programs through NMPF and IDFA support workforce development on the farm and at processing plants



Welcome

It's a true privilege to serve U.S. dairy to support both its progress and positioning in advancing sustainability. And it is with great pride we share details of the growing momentum around our shared platform of social responsibility priorities. We are a diverse community made up of thousands of independent family-owned farms, cooperatives and manufacturing businesses; it's clear that a one-size-fits-all approach doesn't work. That said, the commitment to accelerate action across dairy sectors – even in the face of a global pandemic – speaks to the strong spirit of cooperation and determination that has characterized U.S. dairy for generations.

At the start of 2020, we witnessed the COVID-19 pandemic escalate from a public health to a socio-economic crisis with devastating worldwide impacts on food security. Members of our entire dairy chain – from farm workers to milk haulers to manufacturers to shelf stockers – were deemed by our government as Essential Critical Infrastructure Workers, recognizing their importance to every community across our country.

Despite significant disruptions to their individual businesses, dairy farmers, cooperatives and companies stood shoulder to shoulder in response to the evolving situation to keep people safe, animals well cared for and nutritious milk and dairy foods moving to market – especially for those in greatest need. And they remained steadfast in their collective social responsibility commitments, as seen in these important milestones:

- Adoption of the U.S. Dairy Stewardship Commitment – the industry's voluntary pledge to demonstrate positive impacts in environmental sustainability, animal welfare, community contributions and food safety – grew to 32 cooperatives and processors in 2020, representing 74% of U.S. milk production, and
- Unanimous support of the Innovation Center for U.S. Dairy board of directors confirmed a set of industry-wide Environmental Stewardship Goals to collectively achieve carbon neutrality or better, optimize water usage and improve water quality by 2050. These goals, which were set following a yearlong consultation period, represent the industry's commitment to reducing GHG footprint and water impacts, and the vision of dairy as an environmental solution.

They are supported in part by the U.S. Dairy Net Zero Initiative, the first five-year plan (of a 30-year journey) with innovative strategies aimed at filling research gaps, testing new technologies and practices, and exploring economic models and possible new revenue streams.

During this same time, attention on social issues like hunger, economic equity, worker welfare, and diversity and inclusion also deepened across society and within the dairy community. Leading efforts such as the National Milk Producers Federation's FARM Workforce Development program and the International Dairy Foods

Association's People Strategy underscore emerging priorities for future industry-wide collaboration.

This sustainability report details how we've worked together, while also highlighting key areas of impact, both in environmental stewardship and through our broader social responsibility commitments to our people, our animals and our communities. It reflects U.S. dairy's dedication to nourishing a growing global population with responsibly produced dairy foods, thus contributing to a more sustainable food system. It also shares first-time aggregated data from the processor adopters of the Stewardship Commitment, an important milestone demonstrating our focus on measurement and accountability.

Our continued evolution in the decade ahead requires urgent and deliberate action. No matter their location in the value chain or the stage of their journey, everyone can do something, and this report demonstrates we are well on our way. Our progress during this unprecedented time is a testament to the character of our community, giving us confidence as we approach the opportunities and challenges of the days to come.

Thank you for your interest in this report. We welcome your feedback.

Barbara O'Brien

President and CEO, Innovation Center for U.S. Dairy, and President, Dairy Management Inc.

Mike Haddad

Chair, Innovation Center for U.S. Dairy Board of Directors, and Chairman, Schreiber Foods

Working together to advance sustainability

The U.S. dairy community's early recognition of the need to join together to drive positive change was the catalyst for the formation of the Innovation Center for U.S. Dairy. Established through dairy farmer leadership in 2008, the Innovation Center serves as a pre-competitive forum that convenes industry stakeholders across the value chain to align on common priorities.

Through the Innovation Center, the U.S. dairy community advances a shared social responsibility platform and demonstrates its collective commitment to providing the world responsibly produced dairy foods that nourish people, strengthen communities and foster a sustainable future. Work is prioritized and carried out through standing committees and task forces that represent the diverse sectors across U.S. dairy.

Dairy farmers, companies and other key stakeholders collaborate to address category-wide priorities and develop industry-aligned tools and resources to support continuous improvement. All efforts and outcomes of the Innovation Center, many of which are highlighted in this report, are pre-competitive, technology-neutral and made available to the entire industry.

Innovation Center Board of Directors

22 leading dairy cooperatives and companies = **~65%** of U.S. milk production

+ national dairy organizations:



Dairy Sustainability Alliance® connects the dairy community

The Innovation Center's Dairy Sustainability Alliance is a multistakeholder group consisting of companies and organizations from across the dairy community that want to contribute to dairy's social responsibility journey. Collectively, Dairy Sustainability Alliance members strive to measure, improve and communicate dairy's role in supporting sustainable food systems.

Members include dairy farmers from across the country, along with representatives from cooperatives, processors, brands and retailers, industry suppliers, the dairy checkoff program, academia, the government and advocacy groups – each committed to advancing dairy sustainability.

Meetings, webinars and other channels foster an informed and connected value chain, while allowing for input and alignment in the development of programs and initiatives. In 2020, events that were typically in person were transitioned to virtual meetings in response to the pandemic, a change that enabled more people to participate.

“As a farmer-owned cooperative, we know that magic can happen when the dairy community comes together for good. Participating as a member of the Sustainability Alliance expands our stewardship efforts as we network, learn and advance solutions for a more sustainable food future.”

Patrick Criteser | President & CEO
Tillamook County Creamery Association

The Dairy Sustainability Alliance brings together a broad range of voices within and beyond the dairy community

40 dairy farmer representatives + **140** member companies



34 new members in 2019 and 2020

LEARN MORE at usdairy.com/about-us/innovation-center.

NOTES: Dairy farmer count is not included in the member total and includes those involved during the 2019–2020 report period.

Collaborations and partnerships amplify impact

The Innovation Center leverages collaboration and partnerships to increase and accelerate positive change. Partnerships among public, private and nonprofit organizations are vital to addressing complex sustainability challenges. While there are too many to name, several key partnerships are highlighted here and throughout the report.

Joining forces in the face of COVID-19

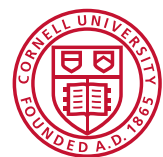
The pandemic was a catalyst for food system stakeholders to strengthen efforts and pursue new collaborations to address unprecedented challenges.



The nation's largest domestic hunger-relief organization is a longstanding dairy industry partner. This well-established relationship enabled the U.S. dairy community to rapidly pivot during COVID-19 and get 469 million pounds of nutrient-dense milk and dairy foods to food banks nationwide. [LEARN MORE](#) on page 26.



A national youth wellness nonprofit co-founded by farmers and dedicated to creating healthier school communities, GENYOUth established the **COVID-19 Emergency School Meal Delivery Fund** to help feed our nation's kids. GENYOUth raised more than \$13 million in cash and in-kind donations to help over 10,000 schools deliver meals, which include milk and dairy, to children facing food insecurity.



The Innovation Center's Food Safety Committee and Dairy Management Inc.™ (DMI) partnered with Cornell University to share dairy-specific COVID-19 response information via a new website and regularly scheduled Q&A sessions with panels of experts. By the end of 2020, the website had more than 47,500 unique page views, and 40 Q&A sessions had reached over 2,700 participants.



Working together to achieve shared objectives

The Innovation Center collaborates with industry experts and global leaders to combine resources, assets and expertise to achieve shared objectives.

- The Innovation Center joined the **Sustainable Agriculture Initiative (SAI) Platform**, a nonprofit network of over 130 members worldwide, and SAI Platform's Sustainable Dairy Partnership recognized the U.S. Dairy Stewardship Commitment. [LEARN MORE](#) on page 10.
- The annual **Sustainable Agriculture Summit**, jointly hosted by the Innovation Center, Field to Market and five other agricultural organizations, welcomed over 500 participants in 2020 for cross-sector dialogue and learning.
- **The U.S. Dairy Net Zero Initiative** is an industry-wide collaboration with key stakeholders to help farmers collectively achieve the 2050 Environmental Stewardship Goals by making sustainability affordable and accessible to all farms. [LEARN MORE](#) on page 13.
- Memorandums of understanding with the **U.S. Environmental Protection Agency** and **U.S. Department of Agriculture** formalize a commitment to collaboration and coordination in areas of mutual interest in environmental stewardship and research.
- **Dairy Management Inc.** joined the **World Economic Forum**, an independent international organization, to engage in Forum Platforms to shape the future of global sustainable food systems.



U.S. Dairy Sustainability Awards

Celebrating sustainability leadership across the dairy value chain

The U.S. Dairy Sustainability Awards launched in 2011 to recognize the transformational work of the dairy community in providing environmental, social and economic benefits. Since then, more than 70 U.S. dairy farms, businesses and collaborative partnerships have been honored as leaders who demonstrate innovative, replicable and scalable dairy programs and practices that benefit the environment, their businesses and local communities. An independent panel of judges composed of industry and conservation experts select recipients based on the results achieved and the potential for others to adopt the creative approaches.



2019 Recipients shared environmentally beneficial production practices and creative approaches to reducing resource and energy use and supporting food security.
WINNERS

Outstanding Dairy Farm Sustainability

Cinnamon Ridge Farms
Majestic Crossing Dairy
Philip Verwey Farms

Outstanding Supply Chain Collaboration

General Mills and Foremost Farms

Outstanding Community Impact

Gleaners Community Food Bank

2020 Recipients made a positive impact by adopting conservation practices in sensitive ecosystems, recycling water, producing clean energy and more.
WINNERS

Outstanding Dairy Farm Sustainability

Twin Birch Dairy
Rosy-Lane Holsteins
Threemile Canyon Farms

Outstanding Dairy Processing and Manufacturing

Leprino Foods Company's
Greeley, Colorado, plant

Outstanding Supply Chain Collaboration

Turkey Hill Clean Water Partnership

Outstanding Community Impact

Sustainable Conservation
Netafim
De Jager Farms
McRee Dairy
Western United Dairies

Our generous sponsors in 2019–2020 made this program possible:



LEARN MORE at USDairy.com/Awards.

DAIRY'S SOCIAL RESPONSIBILITY

People depend on the food they eat to support their health and well-being, but they also want confidence that those foods are produced in ways that are socially responsible. U.S. dairy is proud of the unique nutritional contribution our products make every day. We also recognize the imperative to effectively demonstrate and transparently document other socially important attributes associated with dairy production – how we care for our animals, steward natural resources and give back to our communities.

“Bel Brands USA has proudly adopted the U.S. Dairy Stewardship Commitment, affirming to our customers, our consumers and the global marketplace, Bel Brands’ pledges to responsible dairy production as we nourish the communities we serve.”

Brian Zook | Director Dairy Sourcing & Dairy Sustainability | Bel Brands USA



Assessing U.S. dairy's social responsibility priorities

The Innovation Center, in consultation with industry and external stakeholders, developed the first national materiality assessment for U.S. dairy to substantiate industry-wide priorities and to serve as a guide to individual companies as they identify their own priorities.

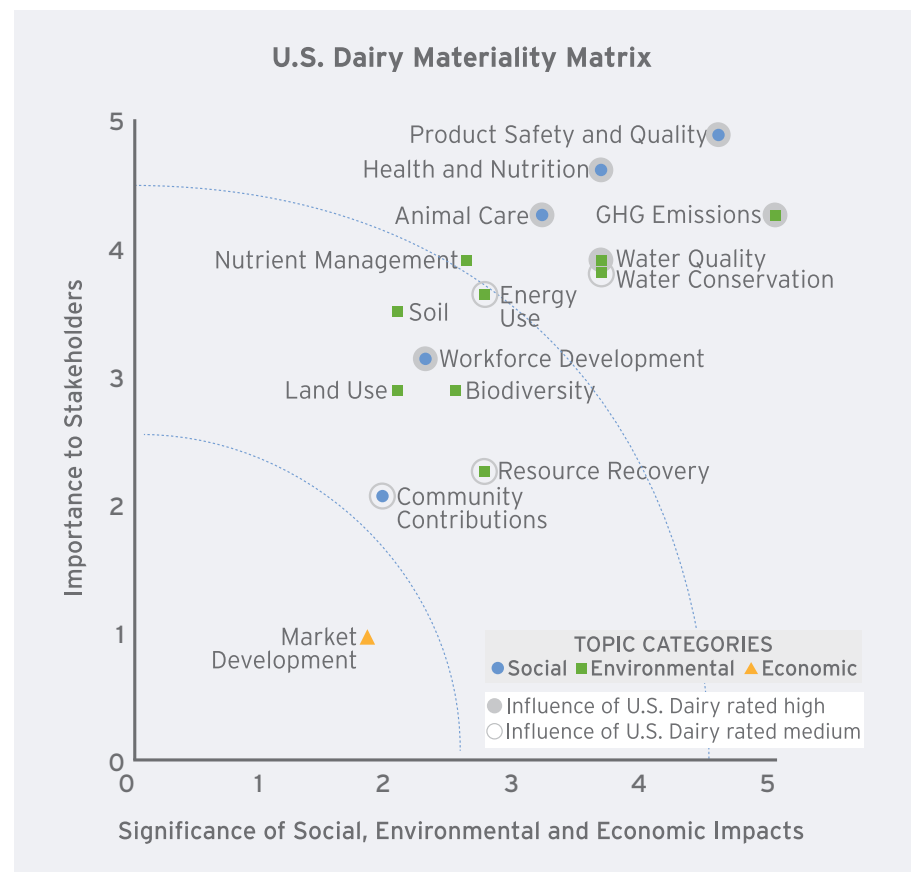
The assessment, which applied GRI Sustainability Reporting Standards principles, was published in May 2019. The results were summarized in a materiality matrix and have been used in many beneficial ways to inform and support industry efforts:

- Substantiation and validation of the Stewardship Commitment priorities (page 10)
- Raising awareness and understanding of materiality and its importance to the industry
- Informing prioritization of national goal setting, including the 2050 Environmental Stewardship goals (page 12)
- Recognition and alignment by globally recognized dairy platforms, including the Sustainable Dairy Partnership (SDP) and the Dairy Sustainability Framework (DSF), to position U.S. dairy's sustainability leadership and simplify reporting expectations for U.S. dairy suppliers (page 10)
- Supporting the development of the *Materiality Guide for U.S. Dairy Companies*, which helps dairy companies conduct their own assessment

Ongoing monitoring to stay responsive to change

Materiality is dynamic: New research findings, for example, can affect the significance of an impact, and the interests of stakeholders can evolve quickly. The unprecedented changes and challenges the world faces have brought heightened attention to both long-established and emerging sustainability issues.

Recognizing these important shifts, the Innovation Center will conduct a refresh of the national materiality assessment in 2021. The process will review the topics from the 2019 assessment and consider additions to ensure the latest insights and expectations are reflected. Like the initial materiality assessment, the refresh will involve extensive stakeholder engagement, and the results will be used to inform future efforts and support dairy cooperatives and companies.



Thresholds for Materiality

The Innovation Center set two thresholds for materiality (the curves on the matrix):

- The first is at 2.5; topics beyond this curve are material for reporting.
- Topics beyond the upper threshold, which is set at 4.5, represent the highest-rated priorities: Product Safety and Quality, Health and Nutrition, GHG Emissions, Animal Care, Water Quality, Water Conservation and Nutrient Management.

Influence of U.S. Dairy

This additional dimension highlights topics for which the operational control or influence that dairy farmers, cooperatives and processors have was rated medium or high.

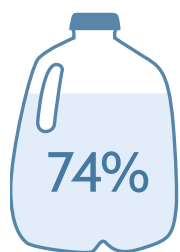
LEARN MORE in the *U.S. Dairy Stewardship Commitment Materiality Assessment and Progress* report available at [USDairy.com](https://usdairy.com).

Demonstrating U.S. dairy's positive impact from farm to table

The industry's voluntary social responsibility pledge covers environmental sustainability, animal care, community contributions and food safety.



The Innovation Center developed the U.S. Dairy Stewardship Commitment to formalize and affirm the work of dairy farmers, cooperatives and processors who choose to work across the industry to advance sustainability and to transparently report progress on their efforts. Cooperatives and processors that adopt the Stewardship Commitment agree to work collaboratively with diverse stakeholders and follow a rigorous set of standards to demonstrate positive impact. Adopters also agree to contribute to U.S. dairy's data tracking for aggregated reporting on progress.



32 dairy cooperative and processor adopters of the Stewardship Commitment represent nearly ¾ of U.S. milk production

LEARN MORE at usdairy.com/about-us/innovation-center/stewardship-commitment.

STEWARDSHIP COMMITMENT TERMS OF ADOPTION



Dairy cooperatives and processors participate in the Dairy Sustainability Alliance.

Dairy processors participate in annual reporting using the Processor Stewardship Reporting Tool (page 18).

Additional terms are noted in subsequent sections.

“Hilmar Cheese Company has publicly reported its sustainability goals for more than a decade; the new Processor Stewardship Reporting Tool will support how we measure and report our ongoing progress.”

David Alhem | CEO & President | Hilmar Cheese Company, Inc.

New Processor Stewardship Reporting Tool

This report marks the inaugural year for reporting nationally aggregated processor data – a monumental milestone in dairy's sustainability journey. When the Stewardship Commitment was launched in 2018, no mechanism existed for dairy processors to securely collect and aggregate data for the Stewardship Commitment metrics.

As a testament to their pledge to measure and report progress, more than 20 dairy processors, working through the Innovation Center, partnered with Harbor Environmental and Safety, an environmental, health and safety (EHS) consulting firm, to develop a processor reporting tool based on the Intelex Platform. Intelex is an EHS and quality management software solution used by over 1,300 companies worldwide.

The Processor Stewardship Reporting Tool provides a credible, consistent and cost-effective way to calculate and track processor sustainability information across facilities, while supporting U.S. dairy by contributing to aggregate data collection representative of Stewardship Commitment adopters. Aggregate processor data is presented in sections that follow.



The Stewardship Commitment Resources Brief provides an overview of resources available to support adopting companies.

“The sustainable practices we embrace not only benefit our local communities, they preserve natural resources and farming legacies for generations to come. SMI's adoption of the Stewardship Commitment helped develop the framework to support these practices and enhance our ability to track and report progress – both as a cooperative and a member of the U.S. dairy community.”

Todd Proffitt | CEO | Southeast Milk, Inc.

Bringing focus and alignment

The U.S. Dairy Stewardship Commitment aligns and quantifies industry action and shared progress on key priorities.

STEWARDSHIP COMMITMENT AREAS OF IMPACT

PRODUCT SAFETY AND QUALITY

Ensuring the safety, quality and traceability of dairy products from grass to glass

FEED IMPACT

Minimizing crop production impacts on water, soil, biodiversity, land use, GHG emissions and energy

GHG EMISSIONS

Reducing dairy's footprint to mitigate climate change

ENERGY USE

Conserving energy and lowering production costs

WATER QUANTITY

Optimizing water use

WATER QUALITY

Protecting water quality

NUTRIENT MANAGEMENT

Managing nutrients to maximize crop yield and safeguard ecosystems

RESOURCE RECOVERY

Maximizing benefits from products and minimizing waste

ANIMAL CARE

Ensuring the well-being of the animals in our care

WORKFORCE DEVELOPMENT

Creating positive and safe work environments

COMMUNITY CONTRIBUTIONS

Supporting healthy, vibrant communities

ALIGNMENT WITH INTERNATIONAL STANDARDS AND FRAMEWORKS

To ensure consistency and credibility in sustainability measurement and reporting, customers, investors, NGOs and others largely expect and implement globally recognized sustainability standards and protocols. The Stewardship Commitment draws upon best practices and guidelines within a range of standards to enhance the integrity, value and relevance of U.S. dairy sustainability reporting, and to increase support and endorsement in the marketplace.



Stewardship Commitment metrics are developed through an open and transparent process based on the ISEAL Codes of Good Practice, which provide widely recognized guidance for stakeholder input and sustainability metric development.



The Stewardship Commitment priorities align with the Dairy Sustainability Framework (DSF), a widely adopted global platform for sustainable dairy. Companies that adopt the Stewardship Commitment automatically contribute to DSF reporting, as the Innovation Center is an aggregating member of the DSF for the U.S.



In 2019, the Stewardship Commitment's comprehensive farm-to-processor GHG measurement and reporting guidance received formal endorsement from the World Resources Institute (WRI) with the "Built on GHG Protocol" mark. This recognition signifies alignment with the most globally accepted and utilized GHG accounting framework – a first within the agricultural sector.



The "Built on GHG Protocol" mark of endorsement also signifies that Stewardship Commitment GHG metrics can be used in CDP reporting.

Learn more in the [U.S. Dairy Stewardship Commitment Alignment with Global Standards summary](#).

RECOGNITION BY LEADING ORGANIZATIONS



In a major milestone, the Stewardship Commitment gained recognition and buyer support across dairy's global customer base through the Sustainable Agriculture Initiative Platform's Sustainable Dairy Partnership (SDP). The SDP is a globally applicable sustainable sourcing model developed by multinational brands, including Unilever, Mars, Nestlé, and Danone, to have a consistent means of assessing and assuring the sustainability performance of dairy suppliers.



"SAI Platform stands proud to support and acknowledge the U.S. Dairy Stewardship Commitment as a national programme for dairy companies to demonstrate their progress against key objectives of the Sustainable Dairy Partnership."

Patricia Garcia Diaz | Dairy Director | SAI Platform

DAIRY IS AN ENVIRONMENTAL SOLUTION

Responsible food production strives to minimize its environmental footprint – to feed more people with fewer resources. The U.S. dairy community is working together to demonstrate dairy as an environmental solution through collective climate action and heightened efforts to conserve natural resources and protect ecosystems.

U.S. DAIRY STEWARDSHIP COMMITMENT AREAS OF IMPACT:

Feed Impact | Energy Use | Greenhouse Gas Emissions | Water Quantity | Water Quality | Nutrient Management | Resource Recovery

“Farmers have solutions to environmental needs and the Environmental Stewardship Committee will help us get there through collaborative action. The dairy farms across our country are broad and diverse, and we need to recognize the potential for each farm to improve practices, as we have been doing for decades.”

Marilyn Hershey | Pennsylvania dairy farmer | Chair, Dairy Management Inc.



Sustainably nourishing the world's growing population by caring for people and planet

U.S. dairy farmers and the dairy community have long been stewards of land, air and water resources, and they are passionate about continuously improving to meet global needs.

Dairy's environmental stewardship is demonstrated through a focus on innovation and efficiency. Thanks to increasingly modern and advanced dairy farming and processing practices, the dairy industry has made continual progress and is dedicated to doing more. Dairy farmers and companies are working harder than ever to mitigate their impact on climate change and protect limited resources and vital ecosystems for current and future generations.

U.S. Dairy's Carbon and Water Footprints

U.S. dairy contributes ~2% total U.S. GHG emissions and uses ~5% of total U.S. water withdrawal.

Fluid Milk GHG Emissions			WATER USAGE
% contribution by life cycle stage			
Feed production	20.3	<div></div>	
Milk production	51.5	<div></div>	
Processing	5.7	<div></div>	
Packaging	3.5	<div></div>	
Transportation	7.7	<div></div>	
Retail	6.5	<div></div>	
Consumer	4.9	<div></div>	
			93.5% crop irrigation for dairy feed
			3.5% milk production
			1% processing
			1.9% other uses

Sources: Thoma et al., Greenhouse Gas Emissions of Fluid Milk, 2010; Henderson et al., U.S. Fluid Milk Comprehensive LCA, 2012.

VISION & GOALS

U.S. Dairy is an Environmental Solution

By 2050, U.S. dairy collectively commits to:



BECOME
CARBON
NEUTRAL
OR BETTER



OPTIMIZE WATER
USE WHILE
MAXIMIZING
RECYCLING



IMPROVE WATER
QUALITY BY OPTIMIZING
UTILIZATION OF MANURE
AND NUTRIENTS

OVERARCHING STRATEGIES



FOR FIELD AND FARM
U.S. Dairy Net Zero Initiative

An industry-wide collaboration to accelerate voluntary adoption of sustainability practices and technologies on farm by closing knowledge gaps, improving economic viability and increasing accessibility.



FOR PROCESSORS
Processor Working Group

Led by the Innovation Center, a working group of 45 participants representing 25 processing organizations convenes regularly and engages in facility-focused workstreams for GHG emissions, water, packaging and waste to drive action and demonstrate progress toward the goals.

COMMITMENT TO TRANSPARENCY

Quantitative and credible measures of progress will be reported every five years.

2050 Environmental Stewardship Goals

Setting industry-wide goals helps accelerate collective action. Representative leadership across the dairy value chain, including farmers, cooperatives, processors, retailers and other stakeholders, led the 2050 Environmental Stewardship Goals development process, which included an extensive stakeholder and public comment period.

Following the yearlong consultation process, the Innovation Center for U.S. Dairy announced an ambitious new vision of dairy as an environmental solution, with goals in areas where dairy collectively has the greatest impact. The 2050 Environmental Stewardship Goals encompass the field, dairy farm and

processing stages of the supply chain collectively and represent the industry's commitment to reducing GHG footprint and water impacts. The goals focus on the most pressing areas of environmental sustainability and are consistent with the 2019 materiality assessment and the U.S. Dairy Stewardship Commitment.

Not every farm, cooperative or processor is expected to reach each goal individually, but together the industry can leverage its diversity to meet them collectively. Progress toward the goals will be reported every five years, beginning in 2025. This reporting will also help reinforce technological and other advancements that can drive improvements, enable nimble adaptation and be scaled for maximum impact.

U.S. Dairy Net Zero Initiative advances on-farm solutions

NZI builds a critical pathway to U.S. dairy's voluntary 2050 Environmental Stewardship Goals.



Launched in 2020, the Net Zero Initiative (NZI) is helping the dairy industry collectively achieve carbon neutrality, optimize water usage, and improve water quality by optimizing utilization of manure

and nutrients. NZI is addressing barriers and investing in research and partnerships to make it more accessible and economically viable for farms of all sizes and geographies to adopt practices and technologies that can provide environmental benefits on the farm, in the field and within the broader community. At the same time, these efforts will advance new revenue streams such as clean energy and carbon sequestration.

The primary expected outcomes of NZI include:

1. The collective U.S. dairy industry advances toward carbon neutrality and significant improvements in water use and quality.
2. In addition to nutrient-dense foods and beverages, dairy farms provide products and services that enable other industries and communities to be more sustainable.
3. Farmers are able to realize untapped value on the farm, making the system of continuous improvement self-sustaining.

The results of NZI will reinforce the role of dairy in sustainable food systems. Successes and learnings from this pioneering initiative will not only benefit dairy but can inform similar approaches across agriculture to advance sustainability.

“As global demand for food production increases, innovation is the key to feeding people while reducing carbon levels around the world. The Net Zero Initiative will help accomplish both imperatives.”

Carrie Vollmer-Sanders | Director of Agriculture Engagement, North America | The Nature Conservancy



Uniting assets and expertise

NZI leverages industry-wide collaboration and cross-sector partnerships to bring together diverse expertise, channel resources and accelerate progress.

- The initiative is led by six U.S. dairy organizations working on behalf of their member constituents: Dairy Management Inc., Innovation Center for U.S. Dairy, International Dairy Foods Association, National Milk Producers Federation, Newtrient and U.S. Dairy Export Council®.

- In October 2020, Nestlé became the first NZI corporate partner. In December, Starbucks announced its intent to join. The Foundation for Food & Agriculture Research, the Soil Health Institute and The Nature Conservancy, along with other leading dairy research institutions, will join as project partners in 2021.

ON-FARM STRATEGIES AND ACTIONS

The U.S. Dairy Net Zero Initiative concentrates on four key areas to reduce dairy's environmental footprint, while delivering benefits on farms and beyond.

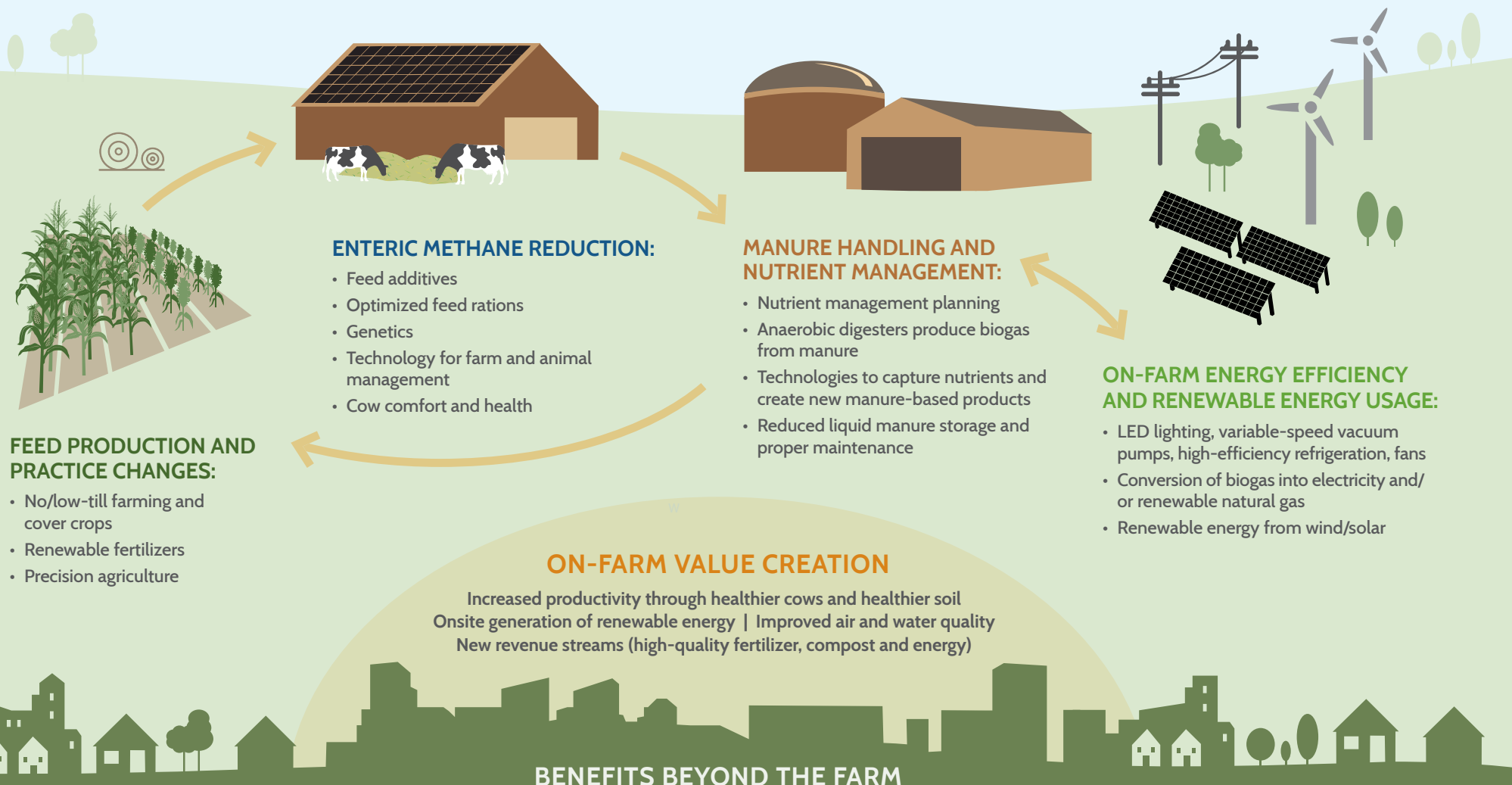
The four areas address the "prints" of on-farm sources of GHG emissions:

Feed emissions
26%

Enteric emissions:
35%

Manure emissions
33%

Fuel emissions
6%



Nutritious milk and dairy foods | Sources of renewable energy for communities | Reduced GHG emissions
Closed-loop option for food byproducts/wastes | Ecosystem services such as improved air and water quality, healthy soil, carbon sequestration, and support for biodiversity.

Visuals do not represent all possible practices, technologies or benefits. Each farm can voluntarily contribute to net zero efforts based on their individual operation.
Internal calculation from: Thoma et al. <https://doi.org/10.1016/j.idairyj.2012.08.013>

National Dairy FARM Environmental Stewardship

The Farmers Assuring Responsible Management (FARM) Environmental Stewardship (ES) program helps track and communicate a farm's environmental achievements as well as set a path for future progress.

Launched in 2017 and administered and managed by the National Milk Producers Federation (NMPF), FARM ES provides a streamlined, unified source for voluntary on-farm assessment and reporting.

Dairy farmers, cooperatives and processors use the FARM ES online tool and resources to measure and communicate a farm's environmental footprint – focusing on greenhouse gas emissions, energy intensity and the use of nutrient management plans. They also use the tool to identify opportunities for advancement that benefit both the planet and the farm's bottom line.



The WRI-endorsed **Scope 3 GHG Inventory Guidance** developed by the Innovation Center specifically references FARM ES as the on-farm mechanism to credibly measure and report emissions at the farm level.



As of 2020:



78% of U.S. milk production comes from cooperatives and processors participating in FARM ES



Since the program started, **59 FARM ES evaluators** have been certified
1,900+ evaluations have been conducted on **1,800+ farms**

2019–2020 HIGHLIGHTS

- **Version 2 of FARM ES** was released with important scientific updates and new data inputs.
- **FARM ES User Guide** was updated for the new version.
- **Evaluator training program** was launched.
- **New resources**, including an Evaluation Prep Guide, were published to support data collection and evaluations.

STEWARDSHIP COMMITMENT TERMS OF ADOPTION



Dairy cooperatives use the FARM Environmental Stewardship Sampling Protocol to report on-farm GHG, energy and nutrient management metrics, OR have a time-bound goal in place to measure and report these metrics through this protocol.

LEARN MORE at nationaldairyfarm.com.

On-farm environmental practices and efforts

Dairy farmers across the country with operations of all types and sizes are working to do their part to conserve natural resources, protect ecosystems and reduce their impacts on climate change.

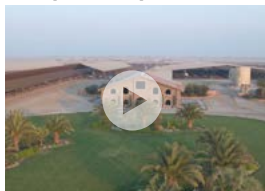
COMMITMENT IN ACTION

These four U.S. Dairy Sustainability Awards recipients show some of the many ways dairy farmers put environmental stewardship into practice.

Cinnamon Ridge Farms uses 400 acres of cover crops to optimize feed production and provide a higher-quality diet for its 220 cows, increasing feed efficiency. Planting cover crops has virtually eliminated erosion, increased soil organic matter and improved water quality on the dairy farm. The owners received recognition from the Soil Health Partnership for their extraordinary efforts.¹⁰



Philip Verwey Farms converted its feed-mixing program from diesel-powered to all-electric, reducing nitrogen oxide emissions from 22 tons annually to just 2, saving 90,000 gallons of diesel – the equivalent of taking 7,900 cars off the road. The electricity that powers the feed mixer is generated from the farm's anaerobic digester, which can also generate enough energy to power 3,000 homes.¹¹



Rosy-Lane Holsteins incorporates genetic technologies as part of its cow health and care strategy to ensure a herd that has the natural ability to ward off illness and disease. Genetics also helps achieve an above average feed-to-milk conversion rate, supporting the farm's goal to reduce its environmental footprint through optimized feed efficiency.¹²



Twin Birch Dairy partners with environmental groups to assess and demonstrate how field practices like no-till and cover crops combined with manure handling and nutrient management technology can reduce runoff and ensure the water quality immediately downstream of the farm is equal to, if not slightly better than, the quality upstream.¹³



26% of on-farm GHG emissions are from feed production¹⁴

Focus on sustainable feed production

Dairy's environmental stewardship begins in the fields that grow feed crops. The Feed Impact priority in the Stewardship Commitment covers interconnected areas of impact: water, soil, biodiversity, land use, GHG emissions and energy.

To help understand and promote reductions in the environmental impact of feed production, the Innovation Center works in partnership with Field to Market®: The Alliance for Sustainable Agriculture. Field to Market is a diverse collaboration working to advance the sustainability of U.S. commodity crop production. Field to Market's Fieldprint® Platform helps farmers and the value chain analyze and advance environmental outcomes for common dairy feed.

Recognizing potential synergies, the Innovation Center worked with USDA's Natural Resources Conservation Service (NRCS) in 2019 and 2020 to conduct a pilot test to identify challenges, opportunities and steps toward improved connectivity between the NRCS field-focused conservation planning tool and the FARM Environmental Stewardship program and Fieldprint® Platform. Pilot findings will inform future strategies and tactics to promote dairy feed sustainability.

LEARN MORE at fieldtomarket.org.

New team focuses on protecting biodiversity

Dairy farms offer unique opportunities to protect and enhance biodiversity. In 2020, the Innovation Center's Environmental Stewardship Committee created a Biodiversity Task Force of dairy farmers, cooperatives, processors and advisers to support advancements in understanding, measuring and improving U.S. dairy's impacts on biodiversity. The task force will assess current research and practices, engage with experts and stakeholders, and develop recommendations on potential metrics and goals.

Processor Working Group

Led by the Innovation Center, the Processor Working Group convenes regularly to identify collaborative, industry-wide solutions that support the U.S. Dairy Stewardship Commitment and progress toward the 2050 Environmental Stewardship Goals.

The Processor Working Group is currently composed of 45 participants representing 25 processing organizations. The group began as an offshoot of the Dairy Sustainability Alliance to promote discussion and alignment around key dairy processor priorities and has been instrumental in developing the Stewardship Commitment's metrics and guidance materials focused on processor priorities.

In 2020, the Processor Working Group created four environmental teams focused on GHG emissions, packaging, waste and water. These teams will develop and share recommendations through the Innovation Center's Environmental Stewardship Committee and lead dairy processors' collective actions to achieve measurable progress toward the industry's shared goals.



GHG TEAM

- Industry guidance resource on GHG emissions reduction opportunities

The GHG Team is focusing its efforts on developing an industry guidance resource that communicates options for achieving GHG reductions in dairy processing operations and identifies avenues to connect with the U.S. Dairy Net Zero Initiative (page 13).

The guidance resource will highlight best practices, case studies and supplementary resources to assist processors and enable them to contribute to progress on the industry's goal of carbon neutrality or better.



WASTE TEAM

- Industry guidance on waste audits and resource recovery opportunities

The Waste Team's initial efforts concentrated on exploring methods to measure and reduce GHG emissions from processing waste streams.

The group reviewed potential tools to quantify and report the GHG reductions associated with various waste management practices, but it did not identify one that was well positioned to enable corporate reporting. The group shifted efforts to work on industry guidance for processors to conduct waste audits and identify waste reduction and resource recovery opportunities.



PACKAGING TEAM

- Packaging landscape assessment
- Educational sessions

The Packaging Team recognized the need to better understand the current dairy packaging landscape to help focus its efforts. The team commissioned a survey to determine the types and prevalence of materials used in dairy packaging, which led to learning opportunities related to specific materials, such as high-density polyethylene (HDPE) and polyethylene terephthalate (PET) plastics.

The team will continue to compile insights and monitor existing and future packaging opportunities and limitations to inform its strategy going forward.



WATER TEAM

- Industry water reuse guidance
- Alignment of metrics with standards

The Water Team elected to develop an industry guidance resource that clearly and consistently defines water reuse, recycling and reclamation in a processing-specific context and highlights opportunities and applications for reusing water in dairy processing.

Additionally, the team is considering ways to better align the Stewardship Commitment processor water metrics with globally accepted reporting mechanisms that are widely used for corporate sustainability reporting, such as the GRI Standards and CDP's water questionnaire.

Taking bold climate action

Dairy processors are working to pursue a range of strategies to reduce GHG emissions, such as energy efficiency projects and investment in on-site renewable energy generation.

GHG Emissions Contribution by Product Category

While processing/manufacturing contributes a smaller portion of GHG emissions than milk production, opportunities to reduce energy use, through conservation, efficiency and the use of renewable energy, can deliver significant GHG reductions and cost savings.



FLUID MILK

Processing accounts for 5.7% of the U.S. fluid milk carbon footprint.



CHEESE AND WHEY

Manufacturing accounts for 10.7% of the U.S. cheese and whey carbon footprint.

Percentages represent processing plants and exclude packaging and distribution. Source: U.S. Dairy's Environmental Footprint: A summary of findings, 2008-2012 (pg. 13).

New resources to support reporting

More than 12 leading dairy processors and industry leaders helped develop comprehensive guidance to prepare GHG Protocol-aligned Scope 1, 2 and 3 inventories and to quantify emissions. The effort also included consultation with leading dairy customers and environmental nonprofits.



Completed in 2019, the industry's GHG accounting and reporting guidance was endorsed with the "Built on GHG Protocol" mark by the renowned World Resources Institute (WRI) – a first within the agricultural sector.

STEWARDSHIP COMMITMENT TERMS OF ADOPTION



Dairy processors report using measurements consistent with methodologies outlined in the Dairy Processor Handbook (e.g., GHG Protocol, EPA Waste Management Hierarchy) through the Processor Stewardship Reporting Tool.

COMMITMENT IN ACTION

The following highlights are just a few of the many steps processors are taking to save energy and lower their carbon footprint.

- **General Mills** and **Foremost Farms** were recognized with the 2019 Outstanding Supply Chain Collaboration award for their efforts to reduce GHG emissions. In 2016, Foremost Farms convened a group of 16 Michigan dairy farmers who supply milk for General Mills' yogurt to align toward common goals and ultimately pilot NMPF's FARM Environmental Stewardship module. The dairy farms that participated in the pilot saw a combined 11% reduction in GHG over a three-year period, which outperformed the national and regional benchmark averages.¹⁵
- In 2020, **Leprino Foods Company's** Greeley, CO, processing facility earned the Outstanding Dairy Processing and Manufacturing award for its commitment to sustainability. Among the multiple approaches to reduce GHG emissions are on-site electricity generation, which is projected to reduce the companywide GHG footprint by 10%, and newly installed LED lighting, which saves enough energy to light nearly 500 homes for one year.¹⁶
- **Setting targets to drive results:** During the 2019–2020 reporting period, nearly a third of Stewardship Commitment adopters publicly communicated carbon reduction goals, with several setting science-based targets.



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

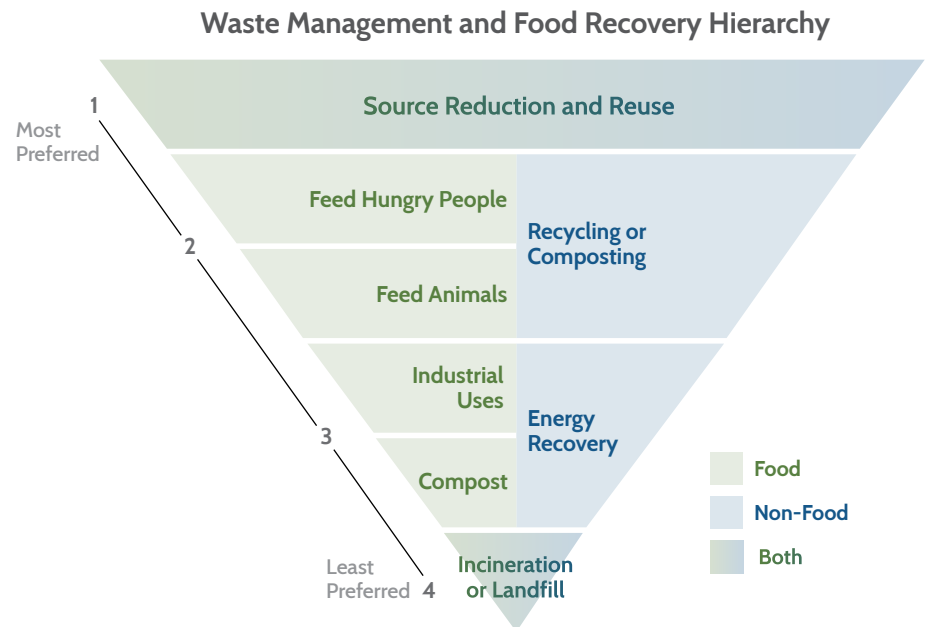
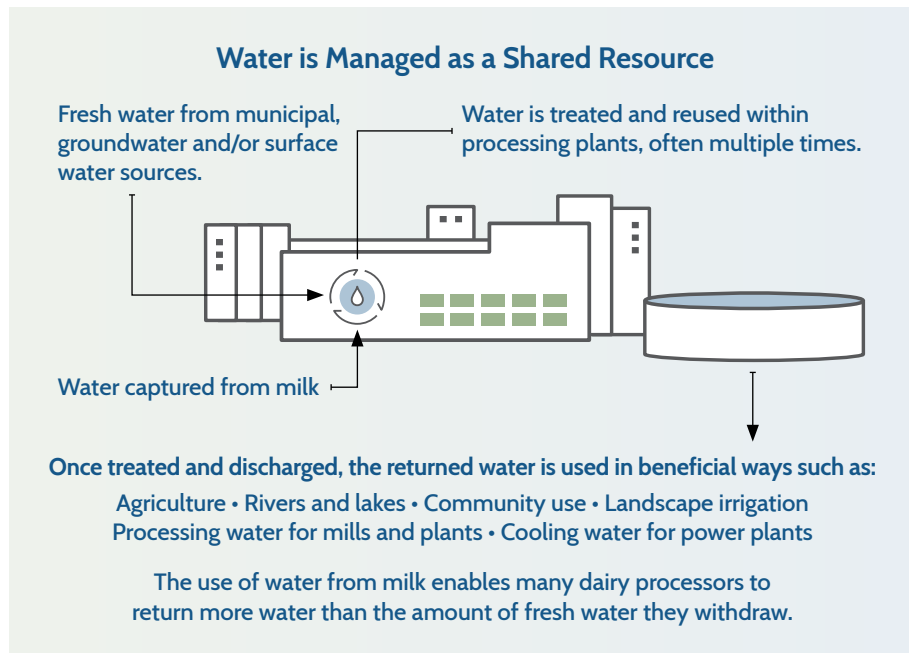
SCIENCE
BASED
TARGETS

Science-based targets are aligned with what climate science shows is required to limit global warming to 1.5°C and prevent the worst effects of climate change on human society and nature.

LEARN MORE at the Science Based Targets initiative.

Protecting and conserving natural resources

The dairy community continuously pursues doing more with less and promoting circularity through efforts aimed at the conservation and reuse of precious natural resources, water quality protection and waste reduction.



Source: This hierarchy merges the U.S. EPA's Waste Management and Food Recovery Hierarchies.

COMMITMENT IN ACTION

WATER QUANTITY AND QUALITY

The dairy community's dedication to responsible water management concentrates on conserving water and ensuring high water quality. The following example is just one of the many ways companies are taking action to deliver positive results.

- **Working together on water:** In 2019, the Turkey Hill Clean Water Partnership, comprised of **Maryland & Virginia Milk Producers Cooperative Association**, the **Alliance for the Chesapeake Bay** and **Turkey Hill Dairy**, was formed to provide dairy farmers with the resources needed to improve local water quality and ensure environmental conservation compliance. Practices promoted will deliver improvement in water quality and reduced GHG emissions.¹⁷

RESOURCE RECOVERY

Efforts related to resource recovery aim to extract the maximum practical benefits from products, reduce the consumption of virgin natural resources and generate the least amount of waste. This processor highlight is only one of many examples.

- **Packaging improvements conserve resources:** **Tillamook** is making changes to reduce the weight and volume of plastic packaging, improve recyclability and use Sustainable Forestry Initiative certified paper products. In 2019, the company reduced plastic weight by 30% and lowered paperboard and corrugated usage in its popular Cheeseboards product, while increasing distribution efficiency.¹⁸

2020 Processor Aggregate Data Report: Environmental

Aggregate Base (Reporting Entities)

Results cover processing locations for the 25 processors that adopted the Stewardship Commitment and reported 2020 calendar year data.

25 processors represent 70% of U.S. milk production.*

Metric Reporting

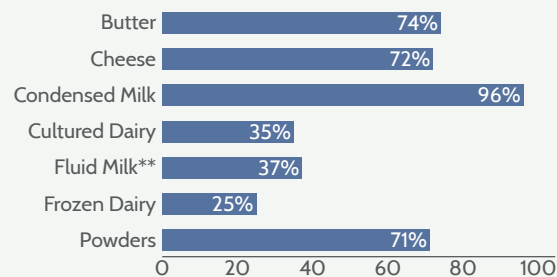
Data reported by metric varies among processors; therefore, aggregate coverage for each indicator set is noted. Processors enter their data into the reporting tool, by facility or for the company as a whole, for calculation and aggregation. Harbor Environmental and Safety, which developed the tool, performed a quality review for data consistency and calculation accuracy. Harbor did not verify the data submitted by each processor.

Aggregate Intensity Metrics

The intensity-based metrics report amounts per pound of dairy production at the processing level.

Product Distribution

% of 2020 U.S. production of key dairy categories represented by reporting processors (by weight)*



*Source: Calculations provided by The McCully Group using 2020 data from USDA NASS Dairy Products Annual Summary (April 27, 2021), Hoard's Dairyman Top 50 Cooperatives and private estimates.

**The 2020 aggregate is under-indexed in fluid milk due to significant transactions that took place during the reporting period. It is anticipated that the next aggregation (2021) will be more balanced in the fluid milk category. This is consistent with guidance from the Stewardship Commitment Committee on facility startups and acquisitions.

For more information, contact stewardship.commitment@dairy.org.

ENERGY & GHG EMISSIONS

88% of processors reported data for all their processing facilities; 100% of processors partially reported.

Metric	2020
ENERGY USE INTENSITY	
kWh per pound of production output	7.431
MMBtu per pound of production output	0.025
GHG EMISSIONS INTENSITY (SCOPES 1 AND 2) (kg CO ₂ e per pound of production output)	
GHG Emissions Intensity (Location-Based)	1.426
GHG Emissions Intensity (Market-Based)	1.343

WATER QUANTITY

80% of processors reported data for all their processing facilities; 92% of processors partially reported.

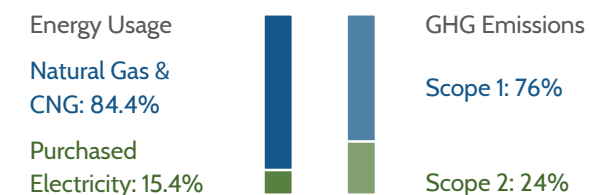
Processors' use of water extracted from milk enables them to return more water than they withdraw from municipal and other sources.

Metric (gal. per pounds of production output)	2020
WATER WITHDRAWAL	
Freshwater Withdrawal by Source	
Municipal/third-party source	55% 0.285
Groundwater	22% 0.116
Surface water	2% 0.010
Produced water/milk water ¹	21% 0.111
WATER RECYCLED	0.121
WATER DISCHARGED	0.527
WATER SURPLUS²	0.005

1. Milk water is water extracted from milk during processing.
2. Water consumption (Withdrawal - Discharged) is reported as a surplus because Discharged > Withdrawal.

ENERGY AND GHG EMISSIONS BY SOURCE

The main sources of GHG emissions are natural gas (Scope 1) and purchased electricity (Scope 2).



53.21% of grid electricity is generated from renewable sources.

Compressed natural gas (CNG) represents 6.2% of usage, and other energy sources (0.3% of usage) contribute < 0.2% of GHG emissions.

RESOURCE RECOVERY

84% of processors reported data for all their processing facilities; 100% of processors partially reported.

Processors pursue strategies for zero waste to landfill in line with the U.S. EPA's Waste Management and Food Recovery Hierarchies, which provide the basis for the resource recovery metrics.

RESOURCE UTILIZATION AND WASTE DIVERSION

95.4% OF RESOURCES PUT TO BENEFICIAL REUSE



Food donated to feed hungry people: 10.4%

Food/organics repurposed to feed animals: 53.2%

Food/organics repurposed for industrial purposes: 14.0%

Food/organics sent to compost: 3.6%

Non-food sent to recycling/composting: 10.7%

Non-food repurposed for energy recovery: 3.4%

Values do not sum to 100% due to rounding. Note: Waste sent to incineration without energy recovery is not shown because value is less than 0.01%.

The Stewardship Commitment processors participating in reporting are Agri-Mark, Associated Milk Producers, Bel Brands USA, California Dairies, Cayuga Milk Ingredients (incl. Pursue Happiness), Chobani, Dairy Farmers of America (incl. Cumberland Dairy), Danisco, First District Association, Foremost Farms USA, General Mills, Glanbia Nutritionals, Great Lakes Cheese Company, Hilmar Cheese Company, HP Hood, The Kroger Co., Land O'Lakes, Leprino Foods Company, Maryland & Virginia Milk Producers Cooperative Association, Michigan Milk Producers Association, Prairie Farms Dairy, Schreiber Foods, Select Milk Producers, Tillamook County Creamery Association and United Dairymen of Arizona.

DAIRY HELPS PEOPLE AND COMMUNITIES THRIVE

Dairy's positive societal and economic impacts help develop strong, healthy and resilient communities. In addition to producing nutritious dairy foods that can sustainably feed a growing global population, the dairy community supports more than 1 million jobs across the country while working to promote community vitality (IDFA, 2021).

U.S. DAIRY STEWARDSHIP COMMITMENT AREAS OF IMPACT:

Product Safety and Quality | Animal Care | Workforce Development | Community Contributions

“Our longstanding partnership with U.S. dairy allowed us to build on the Dairy Nourishes America initiative and provide more dairy for the millions of people impacted by the pandemic.”

Jerod Matthews | Director, Product Sourcing - Dairy | Feeding America



Leading with safety and quality from grass to glass

Dairy is proactive in protecting consumers and ensuring the quality of its products.

While robust regulatory requirements cover all aspects of dairy production, processing and distribution, the U.S. dairy industry promotes excellence by openly sharing knowledge and best practices, publishing tools and guidance, conducting training, leading new research, and providing pre-competitive support to the dairy community.

Antibiotic stewardship on dairy farms

Administered by the National Milk Producers Federation (NMPF), the **FARM Antibiotic Stewardship module** provides education and resources to support informed decision-making for using antibiotics in dairy animals. The program's annually updated Milk and Dairy Beef Drug Residue Prevention manual educates dairy farm managers on the responsible use of antibiotics. Its emphasis on the importance of the veterinary-client-patient relationship is reinforced through the FARM Animal Care program. Within Version 3.0 of the program, which was in place from 2017–19, it was found that 78% of dairy farmers met that requirement with the remaining 22% needing to meet that standard within the year.

Results demonstrate responsible practices:



No samples of pasteurized fluid milk or milk products **tested positive for residues in 2020.**

Since 1995, 99% of bulk milk pickup tanker samples tested free of antibiotics, and there

has been a 90% decrease in bulk milk pickup tanker antibiotic residues, with the lowest ever incidence in 2020.

In 2020, 99.99% of nearly 3.47M bulk milk pickup tanker samples tested free of antibiotics.

Any milk that tests positive for antibiotic residues is destroyed and cannot be sold for human consumption.

Sources: *National Milk Drug Residue Database fiscal year 2020 annual report.* (Table 1). [nmrd.com/fy-20.pdf](https://www.nmrd.com/fy-20.pdf); *National Milk Drug Residue Data Base fiscal year 1995 annual report.* (Table 1). [nmrd.com/fy-95.pdf](https://www.nmrd.com/fy-95.pdf).

Processor food safety

The Innovation Center for U.S. Dairy's Food Safety Committee convenes leaders in food safety and quality, with the mission of ensuring broad adoption of advanced risk mitigation practices to protect people and global consumer confidence in U.S. dairy. During the pandemic, this longstanding committee served as a trusted forum for companies to ask time-sensitive questions, share best practices and interpret government guidance to ensure production continued safely. The forum fostered enhanced collaboration, providing crucial risk mitigation around worker safety, product safety and quality, and increased sanitation.

Sharing best practices since 2011:



4,200 participants trained in food safety best practices

95+ best practices sessions held with industry experts



110+ active volunteers from 52 organizations, including

35 dairy companies, contributed to food safety efforts

Supporting research since 2015:

14 research projects co-funded by dairy processors and farmers through the Innovation Center's Listeria Research Consortium

2019–2020 HIGHLIGHTS

- **Educational opportunities** continued virtually during the pandemic, with new materials developed for dry dairy operations, brined cheeses, artisan/farmstead cheese and ice cream producers.
- **Updated guidance** for dairy product traceability and pathogen control was released in 2020.
- **New Food Safety Culture program:** A strong food safety culture helps companies ensure that the food they produce is of the highest quality and safety. The Innovation Center is leading an industry-wide program to help companies assess and improve their food safety cultures. More than 50 plants across eight companies signed on to complete culture assessments in 2021. Results will be shared as an industry-wide dashboard and used to identify additional programs. Learn more in this **Food Safety Culture webinar**.

STEWARDSHIP COMMITMENT TERMS OF ADOPTION



Dairy processors adopt and apply the U.S. Dairy Traceability Guidelines.

Traceability is the ability to track a product through all stages of production, processing and distribution.

LEARN MORE at the Food Safety page at usdairy.com.

Excellence in animal care

Dairy farmers are committed to the well-being of their animals. That dedication translates into healthy cows that produce high quality, nutritious milk, ultimately contributing to a farm's profitability and success.

FARM Animal Care Program

99%

of the U.S. milk supply comes from farms participating in FARM Animal Care

Administered by the National Milk Producers Federation, the FARM Animal Care Program, an ISO-verified program, helps the dairy industry establish and maintain the highest level of science-based animal care

available. Voluntary participation by dairy farmers in this leading program builds consumer confidence and provides assurance that dairy farmers are dedicated to excellence in animal care.

The program promotes guidelines and standards for evidence-based practices for quality cow care and helps reinforce a culture of continuous improvement.

- The FARM Animal Care Reference Manual and educational materials detail the highest standards for animal care.
- Farmers are evaluated at least once every three years by trained and certified evaluators who provide feedback on areas in which farmers are excelling as well as where improvement is needed. Evaluators work with farmers to address any identified issues within designated time frames.
- Third-party verification ensures program integrity through outside experts, who verify the animal care standards and program implementation on a statistically significant sample of evaluated farms.



2019–2020 HIGHLIGHTS

- **Animal Care Version 4 launched in 2020:** Version 4 reinforces continuous improvement and collaboration with new templates, FAQs, continuing education resources and an evaluation prep guide.
- **International recognition:** The FARM Animal Care Program became the first livestock animal care program in the world to be verified twice through the stringent ISO (International Organization for Standardization) Technical Specification requirements process.



Since the program's inception, **700+ trained and certified second-party evaluators** have conducted **more than 74,000 facility evaluations**

STEWARDSHIP COMMITMENT TERMS OF ADOPTION



Dairy cooperatives participate in the FARM Animal Care Program.

Dairy processors source 100% of purchased milk from FARM-enrolled farms.

LEARN MORE at nationaldairyfarm.com.

Creating positive and safe work environments

Dairy farmers, cooperatives and processors care about their employees. Ensuring safe, healthy and respectful workplaces is central to dairy's responsibility to the individuals who work throughout the dairy value chain and to society in general.

A sustainable dairy industry depends on the availability and retention of skilled, satisfied and engaged workers around the country and across the value chain, from family-owned farms to regional production facilities. The dairy industry offers programs to help dairy farmers and processors strengthen their safety and labor practices and better support their employees.

FARM Workforce Development shares best practices

In 2018, the National Milk Producers Federation introduced FARM Workforce Development to support safe and thriving work environments by providing guidance and information on human resources and safety best practices. The program's resources and educational materials are designed to help dairy farm owners and managers enhance safety management, increase worker engagement and reduce employee turnover.

2019–2020 HIGHLIGHTS

- **Version 1 of FARM Workforce Development's evaluation tool** was released in 2020 after a pilot and public comment period in 2019. This voluntary evaluation provides important assurances to the supply chain and helps farmers identify areas of opportunity within their operation and track improvement over time. Due to COVID-19, the on-farm rollout was limited.
- **A training program for second-party evaluators** was created in 2020 and launched virtually due to the pandemic.
- The **Nationwide Labor Survey Report** published the results of a nationwide survey of U.S. dairy farms, undertaken to better understand current labor trends and human resources and safety practices. The FARM Program commissioned Texas A&M University's Center for North American Studies to conduct the survey to inform program strategy and development.

LEARN MORE at nationaldairyfarm.com.

2020 Employment



94% of dairy farms are family-owned¹⁹



Milk Production
106,653 jobs on dairy farms²⁰



Dairy Products Manufacturing
183,505 jobs²¹

IDFA programs support people in dairy processing

In 2020, the International Dairy Foods Association (IDFA), which represents the nation's dairy manufacturing and marketing industry, launched the People Strategy to further accelerate innovation in workforce and leadership development. The four principles of the strategy are to put people at the center of everything that is done, focus on building the workforce of the future, nurture diversity and inclusion across the dairy industry, and provide the tools to foster organizational well-being.

IDFA's People Strategy is composed of five signature programs:

- **NextGen Leadership Program**
- **Women in Dairy**
- **HR Leaders in Dairy**
- **Dairy Diversity Coalition**
- **The Power of People**



Recognizing exemplary safety performance: The IDFA Dairy Industry Safety Recognition Awards program honored **54 dairy processing facilities and trucking operations** in 2019 and 28 in 2020 for their outstanding worker safety records. **10 of the 33 companies recognized are adopters** of the U.S. Dairy Stewardship Commitment.

LEARN MORE at idfa.org/people.

COMMUNITY CONTRIBUTIONS

Supporting healthy, vibrant and resilient communities

The cooperative spirit and the desire to serve others run deep within the dairy community.

U.S. dairy farms and businesses strengthen communities through direct and indirect economic contributions at the local, state and national levels. Further positive impacts, while often less obvious, occur through generous individual and collective efforts led by members of the dairy community.

Dairy farms, cooperatives and processors, along with their employees and families, actively contribute to their local communities through volunteering, sponsorship of local events, charitable giving and product donations.

According to IDFA's Dairy Delivers® 2021 study, U.S. dairy generates:²¹



\$752.93B Total Economic Impact

\$230.7B
DIRECT IMPACT

\$522.2B
INDIRECT IMPACT

including **\$67.1B tax contribution**

STEWARDSHIP COMMITMENT TERMS OF ADOPTION



Dairy cooperatives and processors use at least one of the metrics for community volunteering, monetary and product donations, or educational opportunities to communicate their community contributions.



COMMITMENT IN ACTION

In 2020, the dairy community escalated efforts to support those most impacted by the COVID-19 pandemic. Meeting the increased need for reliable, nutritious food was a top priority (see next page), along with providing local support to first responders, small local businesses and others in need. Dairy farmers and companies stepped up, taking on challenges ranging in scope from community to nationwide, doing what they could within their respective ranges of control. The following are just a few examples.

- When COVID-19 struck, **Chobani** mobilized nearly 40 nationwide yogurt deliveries, donating 6.5 million cups to Feeding America food banks.²²
- **Dairy Farmers of America (DFA)** created the **Farmers Feeding Families Fund** to meet the increased need of getting nutritious dairy to food banks, especially in rural areas. Several DFA partners contributed to this fund, which, when added to donated product from DFA plants, provided the equivalent of over 16 million servings of dairy to food banks around the country.²³
- **Michigan Milk Producers Association** joined forces with **Kroger's Michigan Dairy** plant to donate approximately 900 pounds of milk per day to the Food Bank Council of Michigan throughout 2020.²⁴
- **United Dairymen of Arizona** donated nearly \$6,000 to help a local food bank secure a new walk-in cooler to provide more storage for perishable items like milk and dairy foods.²⁵

Focus on food and nutrition security

Dairy is a uniquely important component of a healthy, sustainable diet, but not everyone has access to nutrient-rich foods such as milk, cheese and yogurt. Addressing hunger in America has long been an area of focus for the dairy community through organizational and industry-wide efforts to increase the availability and accessibility of dairy to those in need.

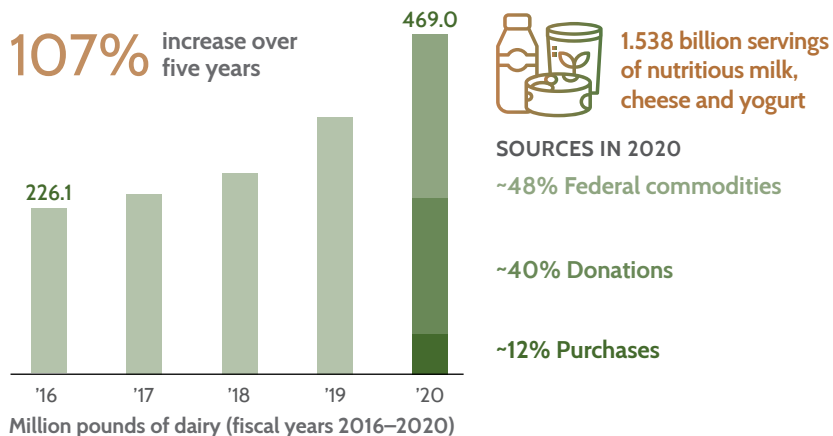
Dairy foods in food banks more than doubled from 2016 to 2020

A key strategy in addressing food security has been dairy's longstanding partnership with Feeding America, the nation's largest domestic hunger-relief organization. The dairy community, food companies and retailers all stepped up efforts in 2020 to support their neighbors and local communities.

The pandemic exacerbated the challenges of food security across the country, reversing progress made in previous years. Feeding America estimates that 45 million people (1 in 7), including 15 million children (1 in 5), may have experienced food insecurity in 2020, compared to 35.2 million individuals (1 in 9) in 2019.²⁶

During the pandemic, dairy cooperatives and processors worked to redirect milk, process product for food banks and participate in government programs that help those facing food insecurity. The well-established relationship with Feeding America enabled dairy coops and companies to get more milk and dairy foods to food banks nationwide in response to the increased need.

Growth in dairy distribution in the Feeding America network



Source: Values provided by Feeding America and reported by its fiscal year, which is July 1 to June 30.



New Food Security Task Force: Increasing reliable access to dairy

As a direct result of the spike in food insecurity due to the pandemic, the Innovation Center for U.S. Dairy formed the Food Security Task Force to reaffirm dairy's commitment to addressing hunger.

Bringing together representatives from leading dairy companies, retailers and nonprofits, the task force will pursue multiple pathways to enable increased and reliable access to nutritious dairy products for Americans facing food insecurity.

Key strategies include:

- **Optimizing the charitable food system** to better process and distribute perishable dairy products
- **Developing solutions that empower** those facing food insecurity
- **Leveraging the power of partnerships** to address infrastructure and transportation challenges

“In partnership with the nation's food banks, the dairy community tackled sourcing/distribution challenges and developed innovative solutions to meet the unprecedented demand for dairy during the COVID-19 pandemic.”

Jackie Klippenstein | Sr. Vice President, Government, Industry & Community Relations | Dairy Farmers of America | Co-chair of Food Security Task Force

The **Dairy Nourishes America Toolkit** outlines several models the dairy community has developed that make providing a consistent supply of dairy feasible. This toolkit is a resource for dairy farmers, processors and retailers to learn how to develop their own local or regional programs. These efforts support Feeding America's goal of providing more nutritious dairy products to its clients.

2020 Processor Aggregate Data Report: Social

Aggregate Base (Reporting Entities)

Results cover processing locations for the 25 processors that adopted the Stewardship Commitment and reported 2020 calendar year data.

25 processors represent 70% of U.S. milk production.*

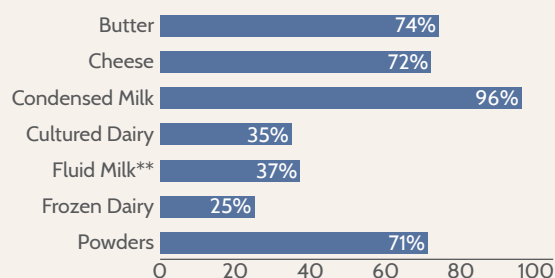
Metric Reporting

Data reported by metric varies among processors; therefore, aggregate coverage for each indicator set is noted. Processors enter their data into the reporting tool, by facility or for the company as a whole, for calculation and aggregation. Harbor Environmental and Safety, which developed the tool, performed a quality review for data consistency and calculation accuracy. Harbor did not verify the data submitted by each processor.

Submission of data was not required within all social categories for the 2020 reporting period.

Product Distribution

% of 2020 U.S. production of key dairy categories represented by reporting processors (by weight)*



*Source: Calculations provided by The McCully Group using 2020 data from USDA NASS Dairy Products Annual Summary (April 27, 2021), Hoard's Dairyman Top 50 Cooperatives and private estimates.

**The 2020 aggregate is under-indexed in fluid milk due to significant transactions that took place during the reporting period. It is anticipated that the next aggregation (2021) will be more balanced in the fluid milk category. This is consistent with guidance from the Stewardship Commitment Committee on facility startups and acquisitions.

For more information, contact stewardship.commitment@dairy.org.

PRODUCT QUALITY AND SAFETY

100% of processors reported data for all their processing facilities.

TRACEABILITY

100% of adopters have committed to voluntary U.S. Dairy Traceability Guidelines.

FOOD SAFETY

100% of reporting processors have validated, verifiable food safety programs and management systems.

100% of reporting processors frequently reassess food safety programs to ensure efficacy and updates.

COMMUNITY CONTRIBUTIONS

96% of processors reported data for all their processing facilities.

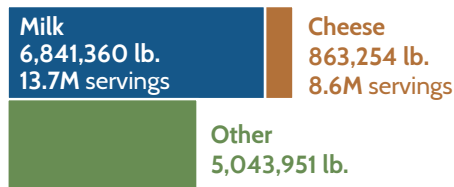
COMMUNITY VOLUNTEERING

70,749 total hours of employee volunteer activities

MONETARY & PRODUCT DONATIONS

\$16,602,657 in financial contributions

12,748,565 pounds of product donated



Notes: The Other category groups yogurt, ice cream and other dairy products. Servings calculation is based on serving sizes in the Dietary Guidelines for Americans, 2020-2025: 1 pound of milk = 2 servings and 1 pound of cheese = 10 servings.

WORKFORCE DEVELOPMENT

88% of processors reported data for all their processing facilities; 92% of processors partially reported.

HUMAN RESOURCES

Total number of jobs supplied 42,840
(As of Dec. 31, 2020)
97% of jobs are full-time.

Benefits

Frequently reported benefits offered to employees by reporting processors include 401(k)/retirement plans and health insurance with employer contribution. In addition, companies provide discounted/free products, tuition reimbursement, company-provided vehicles, company-provided housing, and other benefits.

WORKER SAFETY

Days of restricted work activity or job transfer (DART) rate 3.43

Metric reports incident rate of days away from work, job transfer, or restriction cases, as reported to the U.S. Occupational Safety and Health Administration. DART rate is reported for the aggregate: Total number of DART incidents / total employee hours worked * 200,000.

88% of reporting processors use leading indicators to measure and encourage safe worker behavior.

Leading indicators are predictive measures reflecting the effectiveness of an organization's safety and health activities. They can prompt proactive, preventive action to address a failure or hazard before it leads to an incident (OSHA 2019).



Dairy Transformation

“How can we create inspiring new futures for U.S. dairy that ensure relevance to global consumer needs and preferences, drive innovation, and contribute to a healthier planet and a profitable and agile U.S. dairy value chain?”

Exploring this research question was central to Dairy 2030, an outside-in, long-term strategic planning process that engaged representatives from across the U.S. dairy community to work together to design a consumer-centric future that will spur long-term industry growth and provide economically viable solutions for the U.S. dairy industry.

Led by Dairy Management Inc., Dairy 2030 included 30 C-suite and senior leaders throughout the dairy value chain, including a steering committee from the Innovation Center for U.S. Dairy; 23 dairy farmers from varying geographies, farm sizes and practices; representatives from USDA; and 13 C-suite experts and senior leaders adjacent to or outside of the dairy value chain with a large impact on the future of consumption.

Together, these groups worked on research, workshoping the implications for dairy, and developing opportunities for transforming dairy's future. The Institute for the Future, the world's leading futures thinking organization, served as the research partner.

The work recognizes the interconnectedness between the health of people, animals and the planet and is leading to inspiring new ideas about how dairy can lead in a circular economy and sustainably nourish the world.

Continuing into 2021, leaders across U.S. dairy will continue to refine opportunities that support this vision and coordinate efforts with the many people who endeavor to turn an aspirational future into reality.

Acknowledgments

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Report Feedback

We welcome your feedback on this report and U.S. dairy's sustainability efforts. Please contact us at InnovationCenter@USDairy.com.

Download the report at USDairy.com/InnovationCenter.

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Adopting Companies: Agri-Mark | Agropur, Inc. | Associated Milk Producers Inc. | Bel Brands USA | California Dairies, Inc. Cayuga Milk Ingredients | Chobani | Cumberland Dairy | Dairy Farmers of America | Darigold | First District Association Foremost Farms USA | Franklin Foods | General Mills Inc. | Glanbia Nutritionals | Grande Cheese Company Great Lakes Cheese Company, Inc. | Great Lakes Milk Products, Inc. | Hilmar Cheese Company, Inc. | HP Hood LLC The Kroger Co. | Land O'Lakes, Inc. | Leprino Foods Company | Maryland & Virginia Milk Producers Cooperative Association, Inc. Michigan Milk Producers Association | Milk Specialties Global* | Prairie Farms Dairy, Inc. | Pursue Happiness Schreiber Foods Inc. | Select Milk Producers, Inc. | Southeast Milk, Inc. | Tillamook County Creamery Association United Dairymen of Arizona | *Adopted the Stewardship Commitment after Dec. 31, 2020.

