PACKER & PROCESSOR

U.S. ROUNDTABLE FOR SUSTAINABLE BEEF

FRAMEWORK OUTREACH | **MODULE TOOLKIT**

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U.S. ROUNDTABLE FOR SUSTAINABLE BEEF: INTRODUCTION

Welcome to the U.S. Roundtable for Sustainable Beef (USRSB) Packer & Processor Toolkit. In this resource, you'll find a collection of external sources to support the material in the online training. Templates are available for in-the-moment application and active links will allow you to visit websites instantly, expanding your knowledge of each topic.

OUR FRAMEWORK

The U.S. Beef Industry Sustainability Framework is a voluntary resource developed to identify opportunities for continuous improvement in all types of operations and companies across the beef industry. The ability to establish benchmarks for current conditions and assess progress toward goals is critical to the U.S. beef industry's sustainability efforts. Read the complete Framework here.

This Toolkit addresses the following indicator areas:

- Animal Health & Well-Being
- Employee Safety & Well-Being
- Environmental Strategies
- Waste Reduction

SECTOR-LEVEL GOALS & TARGETS

The USRSB has set goals and sector-level targets for all six high-priority indicators. These pages show the sector targets and metrics for the Packer & Processor sector.

ANIMAL HEALTH & WELL-BEING

SECTOR TARGET: By 2025, all beef packers who handle animals will pass third-party animal transport and handling audits and all packers and processors will require all suppliers to implement mandatory employee training and follow BQA standards for animal care

LEVEL 1 METRICS:

- *PACKERS* Does the company have a comprehensive animal welfare program including third-party verification?
- *PROCESSORS* Does the company have a documented animal welfare policy (or equivalent) and encourage the adoption of the U.S. Beef Industry Sustainability Framework's animal health and well-being metrics?

LEVEL 2 METRICS:

- *PACKERS* What was your company's total number of USDA non-compliance animal welfare violations per 100,000 head processed in the previous calendar year? What percentage of cattle come under a third-party audit? What percentage pass on first audit?
- *PROCESSORS* Does the company use second-or-third party animal welfare audits, such as the North American Meat Institute's (NAMI) Animal Handling Guidelines and Audit Guide, to verify policy compliance to at least the packer level?

LEVEL 3 METRICS:

- Does the company track animal health and well-being over time and set goals for continued improvement? Does the company engage its suppliers or participate in partnerships, initiatives or programs and/or engage its suppliers to advance continuous improvement regarding animal health and well-being in the beef value chain?

EMPLOYEE HEALTH & WELL-BEING

SECTOR TARGET: All companies have a robust employee safety program by 2023. Sector reduction in TRIR by 50% by 2030.

LEVEL 1 METRICS: Does the company have a documented employee safety and well-being program that engages front-line employees and leadership?

LEVEL 2 METRICS: Does the company track Total Recordable Incident Rates (TRIR)?

LEVEL 3 METRICS: Does the company track trends on TRIR and reference rates against the NAICS industry standard rate to set goals for the upcoming year? Does the company participate in partnerships, initiatives or programs to further advance employee safety and well-being?

EFFICIENCY & YIELD

SECTOR TARGET: All beef packers and processors are delivering on a public-facing food waste reduction goal by 2030. By 2030, all beef packers and processors have implemented a zero waste to landfill diversion program and goal that is audited by an accredited third party to a published standard.

LEVEL 1 METRICS: Is a program to divert waste from landfills implemented at the facility?

LEVEL 2 METRICS: How much mass of waste/head or waste/mass of finished product does the company divert from landfill?

LEVEL 3 METRICS: Does the company track waste reduction over time and set goals for continued improvement? Does the company participate in partnerships, initiatives or programs to further advance waste reduction strategies?

SECTOR-LEVEL GOALS & TARGETS

The USRSB has set goals and sector-level targets for all six high-priority indicators. These pages show the sector targets and metrics for the Packer & Processor sector.

AIR & GREENHOUSE GAS EMISSIONS

SECTOR TARGET: 90% of beef processed in the U.S. comes from companies with a greenhouse gas reduction strategy, are reporting against that strategy by 2025 and are delivering on their GHG reduction goal by 2030. By 2030, all beef packers and processors will be taking tangible action to achieve an approved science-based target to reduce emissions in line with limiting global temperature increases to well below 2 or, ideally, 1.5 degrees Celsius relative to pre-industrial levels.

LEVEL 1 METRICS: Are strategies in place to optimize energy efficiency and reduce GHG emissions at company facility(ies)?

LEVEL 2 METRICS: What is the company's carbon dioxide equivalents (CO_2e) per head or CO_2e per mass of finished product?

LEVEL 3 METRICS: Does the company make CO_2e publicly available? Does the company track air and GHG emissions over time and set goals for continued improvement? Does the company participate in partnerships, initiatives or programs to further GHG reduction and improve air quality?

LAND RESOURCES

SECTOR TARGET: All facility construction, renovation or expansion projects will include a plan to mitigate impacts on natural resources by 2025.

METRIC: Does the company have initiatives and/or explore opportunities to mitigate land and biodiversity impacts from new facility developments?

WATER RESOURCES

SECTOR TARGET: All beef packers and processors have assessed water risk and impacts of their direct operations and assessed water risks in key sourcing regions by 2030. All beef packers and processors have implemented concrete steps (e.g., support technical or financial assistance, transparency efforts) to encourage adoption of the U.S. Beef Industry Sustainability Framework water metrics in the U.S. beef value chain by 2030.

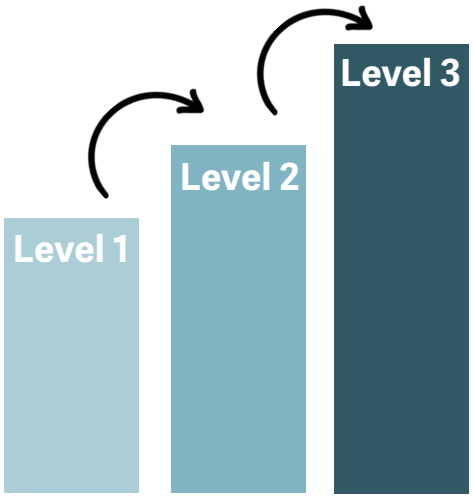
LEVEL 1 METRICS: Is a water resource management plan implemented at the facility?

LEVEL 2 METRICS: How many wastewater permit non-compliances has the facility had in the previous calendar year? What is the water use in gallons/head/day (packers) or gallons/pound of beef processed (processors)?

LEVEL 3 METRICS: Does the company track discharge water quality over time? Does the company have set goals for continued improvement? Does the company make water performance efforts public? Does the company participate in partnerships, initiatives or programs to further advance water resource management?

PROGRESSIVE METRICS:
THE THREE LEVELS OF EVALUATION

The metrics for the indicators in the Packer & Processor sector are progressive. Accomplishing success criteria for one level encourages the company to strive to achieve the next level, with each level having an increasingly broader scope and impact than the previous level.



Level 1

- Evaluated at the **facility** level
- Implies the company has a program to address indicator at facility level
- Suggests facility has implemented at least some resource to address area of impact

Level 2

- Evaluated at the **facility** level
- Implies the company is monitoring and measuring its impacts in this area
- Is a results-oriented and quantifiable metric

Level 3

- Evaluated at the **facility** or **corporate** level
- Implies the company is setting goals and targets and working with other industry stakeholders toward improvement
- Is a forward-looking metric

ANIMAL HEALTH & WELL-BEING: RESPONSIBILITIES

Packers and processors have a unique responsibility in protecting animal health and well-being. Ensuring that cattle have the highest standards of health and well-being, according to industry standards, is beneficial to both individual beef producers and the environmental, social and economic sustainability of the entire beef industry. Read this article on animal health and welfare's impact on sustainability from The Beef Checkoff for more insight.

Policies, programs, audits and continuous improvement initiatives enable facilities and companies to achieve positive outcomes, including:

Packers

- Ensure and continuously work toward improving cattle welfare, with respect to their natural behaviors
- Ensure employee safety while handling cattle
- Improved reputation of animal welfare for the packing plant

Packers & Processors

- Avoid product loss due to decreased quality and/or yield
- Ensure the safety and quality of beef products

Prioritizing animal health and well-being

- ✓ Promotes accountability and transparency
- ✓ Ensures that the humane treatment of animals remains a priority throughout all life stages
- ✓ Continues to advance the area of animal health and well-being in the industry

Facilities should be audited at least annually by third-party auditors with an accreditation relevant to animal health and well-being. Tracking animal health and well-being measurements that are meaningful to the company or facility over time can give insight into areas for improvement.

ANIMAL WELFARE POLCIES: PACKER CHECKLIST

Use this worksheet to document the elements included in your company's animal welfare policy and implemented at your facility.

Circle one

Available in written form for documentation? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Governs the expectations of cattle handling, care and welfare at facilities? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Details expectations of cattle transporters? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Details expectations of producers? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Details expectations of others not officially employed by the establishment but associated with the company/facility? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Outlines process for internal and third-party audits to verify adherence to the standards outlined in the most current version of the NAMI Recommended Animal Handling Guidelines and Audit Guide? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

ANIMAL WELFARE POLCIES: PROCESSOR CHECKLIST

Processors should have a written policy describing the company's animal welfare requirements for its beef raw material suppliers. Use this worksheet to document the elements included in your company's animal welfare policy.

Circle one

Available in written form for documentation? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Describes the company's animal welfare requirements for its beef raw material suppliers? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Requires beef raw material suppliers to meet regulatory requirements for animal welfare? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

Requires adherence to the the NAMI Recommended Animal Handling Guidelines and Audit Guide? **Yes** **Not Yet**

Notes and Action Items:

_____

_____

ANIMAL HEALTH & WELL-BEING: HUMANE HANDLING

The FSIS Compliance Guide for a Systematic Approach to the Humane Handling of Livestock outlines three steps for creating a robust systematic humane handling and slaughter plan:

1

CONDUCT AN ASSESSMENT

FSIS believes that an assessment is the best first step toward a robust systematic approach to humane handling and slaughter. FSIS considers an assessment robust if it takes into consideration the establishment's entire humane handling and slaughter infrastructure.

2

CREATE A WRITTEN PLAN

FSIS believes that developing a written plan is the best second step toward a robust systematic approach to humane handling and slaughter because a written plan can effectively address the four aspects of a systematic approach. Without access to the written plan, FSIS will not be able to verify effective implementation of a program that the establishment believes reflects a robust systematic approach.

3

CREATE A RECORDKEEPING SYSTEM

FSIS believes that developing a recordkeeping system is the best third step toward a robust systematic approach to humane handling and slaughter. FSIS considers a recordkeeping system robust if it promotes accuracy and provides for accountability. Establishments may consider the following elements important features of a recordkeeping system:

- Documents all monitoring, corrective action, verification and reassessment activities.
- Prevents unauthorized access, destruction, alteration or removal of records.
- Provides ready access and information sharing.

The FSIS Compliance Guide linked above also contains the following resources:

- See Pages 13-17 for a sample Assessment Tool for Humane Handling and Slaughter
- See Page 20 for a sample Humane Handling Monitoring Record

ANIMAL WELFARE POLCIES: CREATING A PLAN

Use the following template (two pages) to create a humane handling and slaughter plan at your facility. To see a sample, visit page 18-19 of FSIS Compliance document.

Description of our business:

- Type and size of business
- Product specialization
- Slaughter schedule, production quantity
- Source of animals
- How long animals reside at location before slaughter
- Description of facilities where animals are transported

- Where and how animals are unloaded and housed
- The facilities including material type, size, etc.
- How animals are moved and restrained
- Slaughter procedures used

Animal handling plan:

This example is a good place to start the development of a plan. You can access FSIS assistance through askFSIS | Food Safety and Inspection Service (usda.gov) or contact NAMI at mmartin@meatinstitute.org

ANIMAL WELFARE POLCIES: CREATING A PLAN

Use the following template (two pages) to create a humane handling and slaughter plan at your facility. To see a sample, visit page 18-19 of FSIS Compliance document.

Assessment/Reassessment:

- How was the facility assessed?
- What were the results of assessment?
- What actions have resulted from the assessment?
- What is the plan for reassessment?
- How are assessments documented and tracked?

Procedures, monitoring frequencies and target values:

Documentation:

ANIMAL WELFARE: PUBLIC RELATIONS

Use this worksheet to document the current actions and create a plan for implementing or continuing future, recommended actions.

	We do this	We do not do this yet	**Notes Section** *What actions could be taken to improve upon this action or to begin implementing it?*
Provide a public statement regarding animal health and welfare expectations in the supply chain			
Make audit performance information accessible to the public via the company website			
Track animal health and welfare measurements that are meaningful to the company/facility over time			

MORE RESOURCES

This is not an exhaustive list. Continue exploring resources specific to your state or region.

- Visit meatinstitute.org for animal handling guidelines and audits, and a list of auditors and consultants, along with research, training, events and more.
- Check out the Cattle Care & Handling Guidelines from Beef Quality Assurance (BQA).
- Visit Dr. Temple Grandin's Website for a research and resources on livestock behavior, design of facilities and humane slaughter.
- Check out conferences and events hosted by NAMI – North American Meat Institute.
- Browse the many resources of the National Dairy FARM Stockmanship Training.
- Find resources to get in-house people trained or to find a qualified auditor through PACCO, the Professional Animal Auditor Certification Organization.
- Review the USDA's webpage on laws governing humane slaughter and the Humane Methods of Slaughter Act.

SAFETY MEASURES: ESSENTIAL PROGRAMS

Providing a safe workplace has rewards for both the employee and the packer or processor, and can be seen in improved morale, increased productivity, reduced costs and less absenteeism.

Packers and processors should work to:

- ✓ Reduce employee injuries
- ✓ Improve safety planning and culture
- ✓ Foster a greater understanding of issues surrounding employee safety and associated risks in the sector
- ✓ Collaborate on employee safety issues in the beef value chain

The checklist below shows areas to include when building a program at your facility.

- ❑ Policies, governance structure and management programs promoting a safe work culture and meeting EEOC and OSHA minimum regulations
- ❑ Programs clearly communicating (with documentation) with all employees to ensure employees are treated fairly by the employer in accordance with all U.S. regulations
- ❑ Policies focusing on training and educating all team members and eliminating work hazards

These can be accomplished through intentional development and implementation of an employee safety and well-being program.

The North American Meat Institute (NAMI) has guidance for planning in the events of major crises, such as the COVID-19 pandemic. This information is supported by both OSHA and CDC Guidelines. To prepare for extreme cases threatening worker safety and management, NAMI documents and provides guidance for effective practices.

SAFETY MATTERS: SAFETY STANDARDS ASSESSMENT

Use this worksheet to record the frequency of assessment, effectiveness and ideas or actions for improvement for each of the following safety standards.

TRAINING

How often is training assessed? _____

How would you rate its effectiveness?

Notes and ideas about how training can be improved:

SAFETY PROGRAMS

How often are safety program(s) assessed? _____

How would you rate their effectiveness?

Notes and ideas about how safety programs can be improved:

MAINTAINING EQUIPMENT

How often is equipment assessed? _____

How would you rate its effectiveness?

Notes and ideas about how equipment maintenance can be improved:

REDUCING WORKPLACE HAZARDS

How often are prevention plans for workplace hazards assessed? _____

How would you rate their effectiveness?

Notes and ideas about how workplace hazards can be improved:

SAFETY MATTERS: EMPLOYEE TRAINING

Use the checklist below to help develop your worker safety and well-being training. As you read through each section, consider if your facility is currently implementing these in your training, or if they could improve.

Safety Training Components

- ❑ Identifying hazards and implementing control measures
- ❑ Learning the proper safe work practices
- ❑ Learning when and how to use personal protective equipment
- ❑ Learning to perform basic first aid, CPR and emergency training

Training Tips

- Be specific
- Give examples
- Provide feedback
- Schedule regular practice, interactive components and hands-on activities
- Provide feedback to participants
- Give positive reinforcement
- Keep it short
- Encourage employee involvement
- Mix it up – keep training fresh and engaging

Advice for the Trainer

- ✓ The trainer should know the job well and be prepared ahead of time for each training
- ✓ Explain the purpose of the training
- ✓ Treat the worker as an equal or a friend
- ✓ Demonstrate the process step by step
- ✓ Instruct the worker to perform the job one step at a time and repeat the process, as needed
- ✓ Monitor performance and evaluate the training

Adapted from Noble Research Institute, LLC. Special thanks to Megan Kelley, Sharon Bard, the Beef Quality Assurance (BQA), and the Integrity Beef Alliance.

SAFETY MATTERS: RECORDABLE INCIDENTS

Use this worksheet to document the Total Recordable Incident Rate (TRIR) from recent years, and record trends and commitments for improving TRIR in the future. Note: TRIR may be labeled differently at your company/facility. Other common acronyms include Total Case Incident Rate (TCIR), and Total Recordable Incident Frequency/Rate (TRIF/TRIFR).

Year	Your TRIR
Last Year 20____	
20____	
20____	
20____	
20____	

Total Recordable incident Rate (TRIR)

Total Recordable Injuries X 200,000

Hours Worked

Answer these questions based on your data above for more insight:

- Has your TRIR improved or declined over the last 3-5 years?
- Are there trends in the type of injuries that occur?
- What are the root causes of injury?
- How can injury be further prevented in the future?
- What are the actions we commit to so that we can improve TRIR next year?

MORE RESOURCES

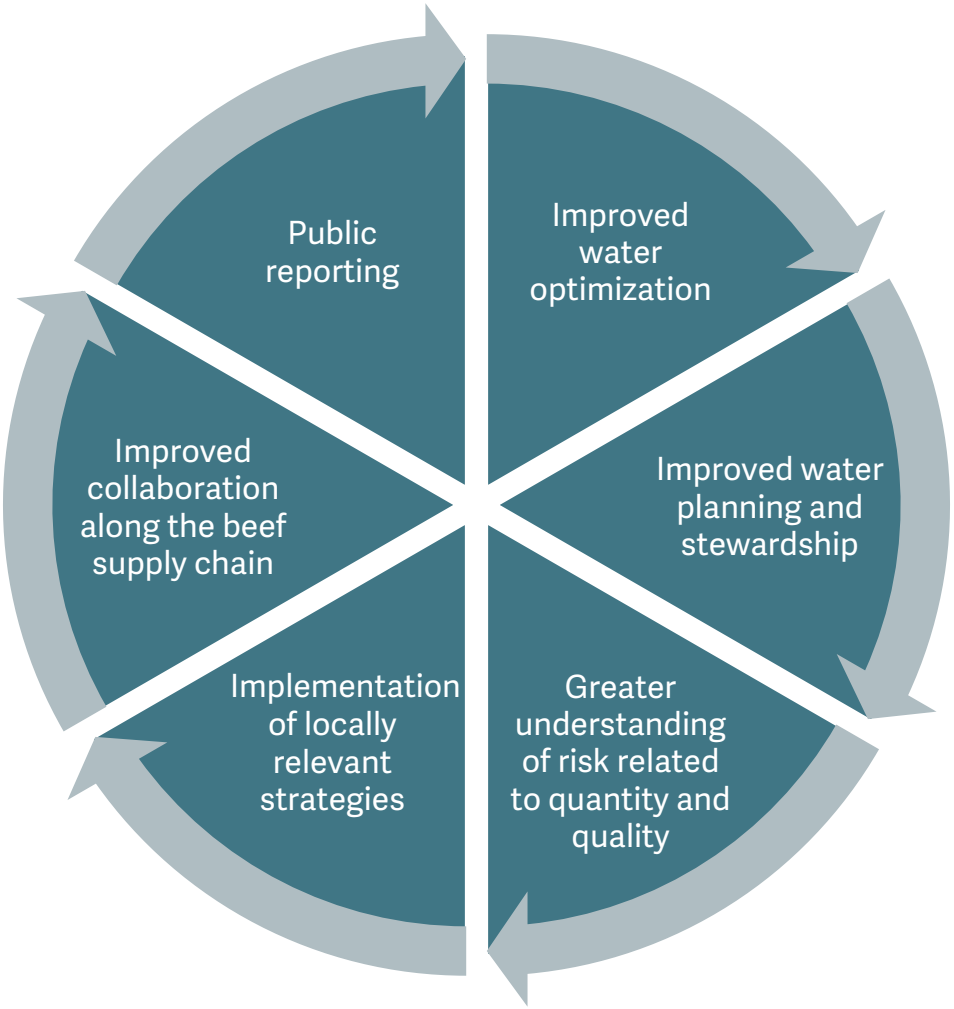
This is not an exhaustive list. Continue exploring resources specific to your state or region.

USRSB recommends the use of outside expertise and consultants who can aid in the development of an employee safety and well-being training program. Public and private agencies and institutions who can help packers and processors develop or evaluate a safety and health program include:

- American Society of Safety Professionals (ASSP)
  Local chapters of ASSP are available in every state and can provide access to resources and professionals working in the safety industry.
- National Safety Council
  Local chapters of the National Safety Conference are available in every state and can provide access to resources and professionals working in the safety industry.
- Government Agencies: OSHA, EPA, FSIS
  These agencies have consultation services and experts that can offer guidance and follow-up to worker safety assessments.
- North American Meat Institute (NAMI) Crisis Center
  Resources and experts are available to assist with program development and assessment.

ENVIRONMENTAL STRATEGIES: WATER

Water resource stewardship is crucial to the long-term viability of the Packer & Processor Sector and beef supply chain. Water resource stewardship should be defined at the local level and used to inform corporate programs and best practices. Each facility has the flexibility to respond to unique local challenges and determine the most effective water stewardship strategies. Objectives of water resource stewardship include:



WATER RESOURCE STEWARDSHIP: KEY CONSIDERATIONS

Key considerations for packers and processors water resource stewardship include:

Location of a facility is a key water resource factor. Some facilities may be in water-stressed areas, which increases the importance of packers and processors managing water responsibly.

Electricity and other pre-chain water consumption activities, especially from materials such as corrugated cardboard, must be considered in the overall facility water consumption.

End-of-life landfill disposal for production and packaging waste also impacts overall water resources for the facility.

Consider other competitors for water usage in the area, such as cities, agriculture production, other companies, etc.

WATER SUSTAINABILITY: LEADING THE WAY

The Packer & Processor sectors can lead the way in water sustainability in the following ways:

- ❑ Industry leaders should track and report water quality and quantity, including short- and long-term goals.
- ❑ Leading companies should strive for continuous improvement through engaging with industry organizations and/or initiatives. One example is assessing the water risk of direct operations using the World Resource Institute (WRI) aqueduct tool and incorporating data into local water management plans.
- ❑ Packers and processors should publicly disclose water quality and use performance through a company website, annual report, sustainability or corporate responsibility report, or other publicly available documents.

WATER RESOURCE MANAGEMENT: CREATING A PLAN

Use this tool as a guide for developing a water resource management plan.

STEP	TIPS
Set an overarching policy or goal	*Consider the following as possible policies or goals:* • *Stormwater pollution prevention plan to address stormwater risk.* • *Wastewater management plan, aligning with relevant permits and regulations.*
Assess current water use and costs	*Packing and processing facilities should record water used per head (packers) and/or per pound of beef processed (processors). Water calculators like Aqueduct from the World Resource Institute or software like Enablon can help any size operation.*
Develop a water balance	*These can be simple spreadsheets or third-party consultations that aim to establish a water balance through audits with experts.*
Assess water efficiency opportunities and economics	*Collect the above information into a single file or document to identify opportunities. Utilize tools and metrics to assess your company's or facility's economic relationship to water use.*
Develop an implementation plan	*In the implementation plan, establish priorities to allocate funding and efforts for water efficiency projects.*
Measure progress	*Plan for contingencies.*

MORE **RESOURCES**

This is not an exhaustive list. Continue exploring resources specific to your state or region.

Explore EPA rules and regulations related to:

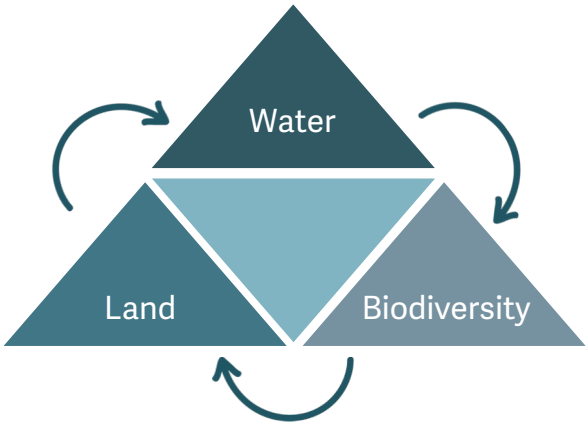
- The Clean Water Act (CWA) Compliance Monitoring program and Safe Drinking Water Act (SDWA)
- Effluent Guidelines – national regulatory standards for wastewater discharged to surface waters and municipal sewage treatment plants.
- The Office of Wastewater Management, Water Quality Criteria, and Water Quality Standards
- Oil Spill Prevention and Preparedness
- My Environment: a search tool designed to provide a cross-section of environmental information based on a user's location.

ENVIRONMENTAL STRATEGIES: LAND

Land resource stewardship is crucial to the long-term viability of the Packer & Processor Sector and beef supply chain. It is defined as the stewardship of terrestrial and aquatic habitat in relation to water, soil and biodiversity in an area; impacts of land use and land use conversion, both caused by and prevented by ranching and farming activities and other supply-chain land use decisions.

Objectives of Land Resource Stewardship:

- ✓ Develop sustainable land management practices within guidelines for new facility development and/or remodelling
- ✓ Demonstrate land management considerations with plans



LAND RESOURCE MANAGEMENT: IMPACT ASSESSMENT

If new facility developments will expand the footprint of the facility or alter existing land use, the company should understand impacts to, or effects on, biodiversity and mitigate those impacts.

BIODIVERSITY IMPACT ASSESSMENT & MITIGATION CHECKLIST

- ❑ Set an overarching goal or policy
- ❑ Assess current land use and costs
- ❑ Understand local environmental regulations, starting with your state agency or state regulatory body
- ❑ Assess impact to biodiversity
- ❑ Develop an implementation plan
- ❑ Measure progress and impact
- ❑ Plan for contingencies

TIP! Consider building relationships with organizations, such as The Nature Conservancy, World Wildlife Fund or Ducks Unlimited. These organizations can help support biodiversity assessment and work in advance of sustainability concerns.

ENVIRONMENTAL STRATEGIES: AIR & GHG

The most recent beef Life Cycle Assessment (LCA) by Putman et al. (2023) noted opportunities for energy reduction within the Packer & Processor Sector. One of these opportunities is the increased use of biogas captured and converted by packing plants, leading to lower electricity requirements.

EPA Description of Biogas Recovery

Biogas is created when animal waste (or manure) decomposes. Capturing biogas from cattle, hog and poultry farms can reduce greenhouse gas emissions and recovering the methane from the biogas can provide a cost-effective source of renewable energy. Recovered biogas can be an energy source for electricity, heating or transportation fuel. Biogas recovery is a proven technology that is widely used in sectors like food processing and wastewater treatment. In agriculture, biogas recovery systems are already used at hundreds of farms, and could be used at thousands more cattle, hog and poultry farms. A natural process called anaerobic digestion creates biogas. Anaerobic digesters are closed systems that harness this natural process to produce biogas and other useful coproducts. These systems also reduce odors, pathogens and waste.

The EPA has several resources and tools to learn more about biogas recovery and implementing projects related to biogas recovery:

- Get a detailed explanation about anaerobic digestion and its use in biogas production, then see a sample system design and graphic illustration of the technology.
- Discover the benefits of anaerobic digestion and assess whether this technology is right for your company or facility.
- Learn more about the guidelines and permitting for livestock anaerobic digestors.
- Meet operators who are using anaerobic digestors and explore pictures, profiles and case studies of their operations.
- Explore national market data and trends related to biogas recovery systems.
- Find resources to learn more and seek technical training on anaerobic digestion through AgSTAR.

ANAEROBIC DIGESTORS: LEVELING UP YOUR STRATEGY

If your facility or company decides that anaerobic digestor projects should be part of its sustainability plan, use these resources to put your plans into action.

EXPLORE THE AGSTAR BIOGAS TOOLKIT

The EPA Biogas Toolkit serves as a centralized knowledge hub for biogas project stakeholders. Explore this resource to learn more about the potential for your project and its benefits.

CONSIDER MARKET OPPORTUNITIES

Browse existing anaerobic digestion projects and opportunities to expand biogas recovery projects across the U.S.; see how AgSTAR partners with state and non-governmental stakeholders to support all phases of anaerobic digestor projects.

MAKE A SOLID PLAN

Visit the EPA webpage for planning AD projects to consider factors of success, risk analysis and technical review checklists, guides to planning and financing and a vendor directory to help get you started.

BUILD AND OPERATE THE SYSTEM

Find more information on building and operating biogas recovery systems, including guidelines and permitting, handbooks, guidebooks and ombudsman resources.

ENVIRONMENTAL STRATEGIES: TOOLS AND PRACTICES

Tools and practices to improve outcomes for high-priority indicator areas include:

AIR & GREENHOUSE GAS EMISSIONS

- Use of renewable energy and energy efficiency upgrades
- Waste reduction and diversion in processing operations (i.e., enhanced efficiency and yield)
- Adoption of low or zero carbon transportation fleets

LAND RESOURCES

- Mitigation implemented for new facilities
- On-site habitat restoration or installation of green infrastructure

WATER RESOURCES

- Wastewater management (e.g., digesters, green infrastructure)
- Water infrastructure upgrades and maintenance
- Water reuse

**This is not a comprehensive list of all potential practices that may be relevant for every operation within the U.S. beef supply chain. For example, improvements in crop production to lower GHG emissions will greatly benefit the overall climate impact of the U.S. beef industry but are not included here. Instead, this list represents major opportunities that are consistently identified by industry experts and stakeholders.*

MORE **RESOURCES**

This is not an exhaustive list. Continue exploring resources specific to your state or region.

Several organizations have resources on air and GHG environmental strategies:

- The Ecosystem Services Market Consortium focuses on improving soil health systems
- The CDP (formerly Carbon Disclosure Project) is a nonprofit that measures environmental impact
- The Greenhouse Gas Protocol provides global guidance to measure GHG emission for the agriculture sector
- The EPA's Toxic Release Inventory (TRI) Program is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. Find more EPA resources on measuring air pollution here:
    - Air Monitoring at Agricultural Operations
    - Technical Air Pollution Resources
    - Overview of the Clean Air Act and Air Pollution
- The North American Meat Institute (NAMI) and Global Compact Network USA (the U.S. chapter of the United Nations Global Compact) jointly released a tool to measure greenhouse gas (GHG) emissions to aid meat companies of all sizes. This tool enables users to follow along with a case study as an example company sets its own science-based GHG reduction targets, providing explanations and further resources at every step of the process.
- NAMI also recognizes environmental strategies and frameworks to optimize contributions to healthy land, air and water is a focus area for the meat industry.
- The USDA has released a draft interagency report titled "Federal Strategy to Advance Greenhouse Gas Measurement and Monitoring for the Agriculture and Forest Sectors (Strategy)." The 2023 draft publication is also available.

EFFICIENCY & YIELD: TACTICS

The Efficiency & Yield Indicator for the Packer & Processor Sector of the U.S. beef value chain focuses on materials, with the metrics addressing total amount of waste to landfill and amount of waste sent to a landfill per pound of beef produced. Packers and processors wishing to improve their overall waste management should consider a variety of tactics. Understanding efficiency and yield will lead to increased profitability and decreased waste.

Waste reduction efforts by packers and processors looks like:

- ✓ Measured waste reduction
- ✓ Environmental protection
- ✓ No air, land, and/or water contamination
- ✓ Diversion and reuse
- ✓ Responsible landfill disposal

Strategies and programs all packers and processors should have or work on integrating into their operations include:

- Efficient wastewater treatment
- Product and market innovation to reduce animal by-product wastes
- Comprehensive waste management program
- Increased recycling, reusability and compostability
- Zero waste to landfill policy
- Paperless office
- Right-size packaging
- Composting food waste

EFFICIENCY & YIELD: FACILITY PLANNING

Use this worksheet to record progress and ideas for your facility to achieve zero waste.

MATERIALS:

What are the categories and quantities of materials that enter the facility? What are the categories and quantities of materials that exit the facility?

DIVERSION:

What are the available diversion approaches for each category of material? Options include source reduction, reuse, composting, recycling and incineration with energy recovery.

STAKEHOLDERS:

Who are the stakeholders that need to be engaged to support or mobilize the program? What are the next steps for engaging them?

DATA:

What data is currently being collected regarding waste volume and diversion? What additional data would we like to collect regarding waste volume and diversion? How will we collect this data? How will we analyze and use this data?

MORE **RESOURCES**

This is not an exhaustive list. Continue exploring resources specific to your state or region.

Learn more about waste reduction through EPA's resources on Sustainable Management of Food and the Food Recovery Hierarchy.

You can take action on waste reduction in the following ways:

- Get Involved with the EPA Food Recovery Challenge: EPA's Food Recovery Challenge is a voluntary incentive program in which organizations and businesses set data-driven goals, implement targeted strategies to reduce wasted food in their operations and report results to compete for annual recognition from the EPA.
- Discover standards and consider certification with ISO 14001 Environmental Management System: ISO 14001 sets the criteria for an environmental management system and can be certified to. It maps out a framework that a company or organization can follow to set up an effective environmental management system. Designed for any type of organization, regardless of its activity or sector, it can provide assurance to company management and employees, as well as external stakeholders that environmental impact is being measured and improved.
- Adhere to the hazardous waste guidelines in your state: State regulatory requirements may be more stringent than federal requirements. The resources at this site will help you find information specific to the state in which you operate.

NAMI AND PROTEIN PACT: MORE RESOURCES

The North American Meat Institute (NAMI) is a founding partner of the Protein PACT for the People, Animals & Climate of Tomorrow, which unites organizations across the animal agriculture supply chain committed to a common vision for sustaining nutrient-dense animal-source foods for generations to come.

Through the Protein PACT, NAMI has set ambitious aims, including for 100% of its members to deliver science-based GHG reduction targets, and has pioneered sector-wide data collection and reporting. The Protein PACT metrics build and contribute to the USRSB framework and reporting needs. For more, visit theproteinpact.org or meatinstitute.org/Protein_PACT.

Click to explore more NAMI resources on each topic:

Animal Health & Welfare

Environment

Workforce Safety

Fact Sheets & Publications

Third Party Experts

BEEF QUALITY ASSURANCE: BQA MANUALS & GUIDES

Beef Quality Assurance (BQA) is a national program funded by the Beef Checkoff that raises consumer confidence by offering proper management techniques and a commitment to quality within every segment of the beef industry. You can find online trainings, manuals and resources at the National Cattlemen's Beef Association website: BQA.org

MORE RESOURCES

This is not an exhaustive list. Continue exploring resources specific to your state or region.

- The National BQA Manual provides an in-depth look into all aspects of proper animal care and handling topics. This link also provides the manuals for *Antibiotic Stewardship for Beef Producers* and the *Cattle Industry Guidelines for the Care and Handling of Cattle.*
- You can find the U.S. Cattle Industry Feedyard Audit tool designed to create a basis for packers and beef customers to verify that a feedyard follows and adheres to industry best practices. You can also find this BQA Feedyard Assessment designed to help all feedyard managers benchmark their operations in areas, such as animal welfare, cattle handling, recordkeeping, etc.
- For interviews, producer profiles, and practice demonstrations, visit the BQA YouTube Channel.

BQA EQUIVALENT PROGRAMS

Check out these BQA equivalent programs for various producers and related audiences:

- Transporters: BQA Transportation Quality Assurance Program
- Young Producers: Youth for the Quality Care of Animals (YQCA)
- Dairy Cattle: National Milk Producers Dairy Farmers Assuring Responsible Management (FARM)
- Calf Raisers: Calf Care and Quality Assurance (CCQA)
- Canada Equivalent: Verified Beef Production Plus (VBP+) in Canada