

Project Overview

Empowering Local and Regional
Meat Processing in the Upper
Midwest Region



Prepared by the Agricultural Utilization Research
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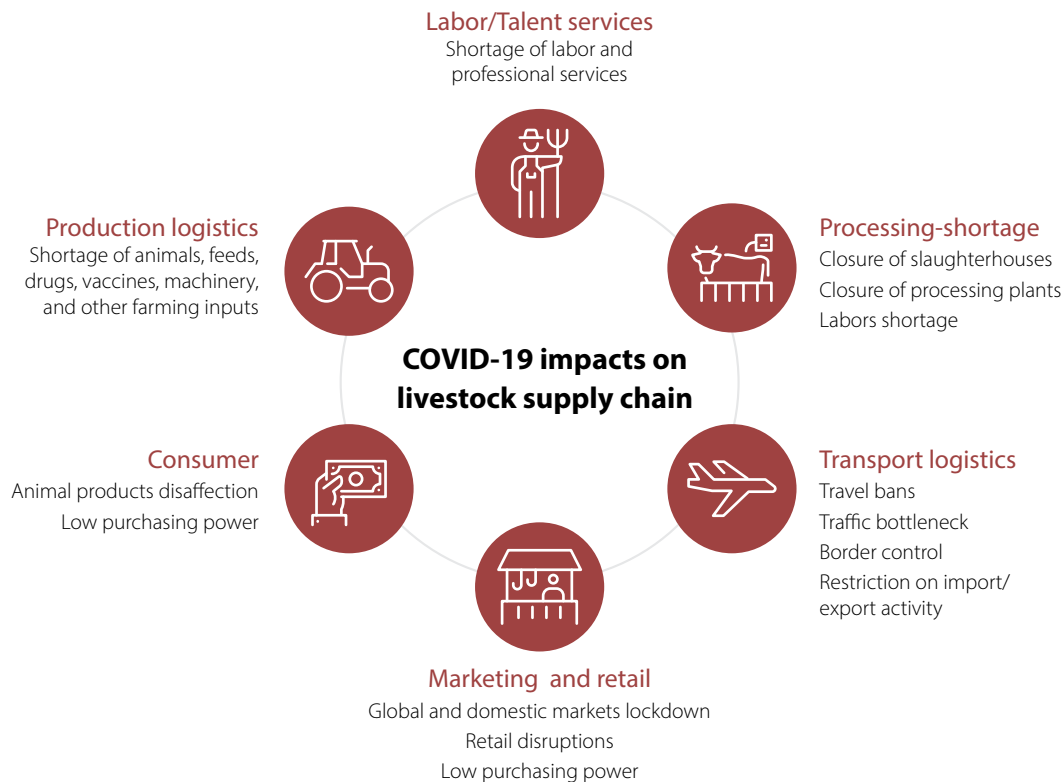
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Introduction

Background

In 2020, the United States Department of Agriculture (USDA) ramped up efforts to support the local and regional meat processing sector. This sector was severely impacted by supply chain disruptions resulting from the COVID-19 pandemic. Supply chain challenges occurred from the producer to the consumer and included shortages of farm inputs, labor gaps, plant closings, logistical restrictions, retail disruptions, and changes in consumer buying habits.



Executive Order 13917 established meat and poultry processing as an essential activity, therefore continuing operations to harvest and process meat (Executive Order 13917, 2020)ⁱ. As employees at large commercial packing plants tested positive for COVID-19, meat and poultry packing plants temporarily shut down or reduced their harvesting, fabricating, and processing capacity. The temporary closures of these large meat and poultry packing facilities resulted in local and regional meat and poultry processors increasing their throughput to accommodate displaced animals. Many of these local and regional meat processing facilities are classified as very small processors with 10 or fewer employees or less than \$2.5 million in annual sales.

The pandemic caused a backlog of animal harvesting. Processing limitations resulted in farmers extending the time a live animal was kept on the farm even though harvesting and processing animals past their target market weight impacts meat quality, carcass yield, tenderness, and additional intermuscular fat that must be trimmedⁱⁱ. A farmer and a small processor typically schedule harvest dates one to three months in advance, but with the pandemic, packers and local processors were planning out 10 months in advanceⁱⁱⁱ. In extreme cases, farmers resorted to euthanasia^{iv}.



Recognizing the fundamental role local and regional meat processors have in the industry, the USDA developed initiatives to support the supply chain through capital infrastructure investments for meat and poultry processors, excluding the nationally dominant beef, pork, chicken, and poultry “big four” companies. Specific grants and loans included the Meat and Poultry Processing Expansion Program (MPPEP) Phase I and Phase II, Local Meat and Poultry Processing Capacity Grant, Meat and Poultry Inspection Readiness Grant (MPIRG), Indigenous Animal Grant, and the Intermediary Relending Loan Program^v. Agriculture departments in several states, including all five states in the Upper Midwest, also provided grants to alleviate the burden of equipment and labor challenges at the processor level.

As these programs came online, the Agricultural Utilization Research Institute (AURI) and the United States Department of Agriculture, Agricultural Marketing Service (USDA-AMS) signed a multi-year cooperative agreement focused on the Upper Midwest’s small meat and poultry processors. Efforts began during the Fall of 2021 to explore opportunities to strengthen industry resiliency and create solutions to position the local and regional meat and poultry processors for success. The project was entitled Empowering Local and Regional Meat Processing in the Upper Midwest. It was designed as a regional pilot that could be emulated in other regions of the country. For this agreement, the Upper Midwest was defined as the following five states: Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin.

Interest in Local and Regional Meat Processors

While the COVID-19 pandemic created significant and long-lasting disruptions to the entire meat industry, the industry has been experiencing change for decades. Over the last 40 years, the four largest meatpackers’ share of cattle and hog purchases has doubled. In 1980, their share represented 36% of cattle and 34% of hogs, compared to 85% of cattle and 67% of hog purchases in 2019^{vi}.

Many very small and small processors operate state-inspected or custom-exempt facilities, which are prevalent in the Midwest and are a key linkage in the local meat supply chain^{vii}.

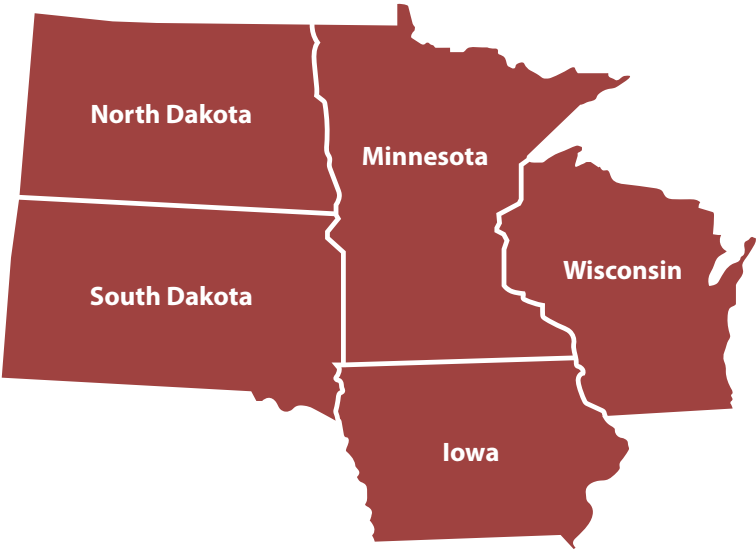
Meanwhile, consumer interest in local foods continues to grow and the small meat processing industry represents a significant market pathway for producers and retailers to link local meat production to local demand^{vii}. A study by Michigan State University’s Center for Regional Food Systems reviewed 19 local food reports across the nation and determined consumers have an increased interest in sourcing local meats and are willing to pay higher prices for local meats^{viii}.



Given the growing demand and the concentration of local and regional meat processing in the Upper Midwest region, mechanisms to support the ongoing competitiveness of local and regional-sized facilities are needed. These facilities fulfill a vital link in the local meat supply chain and provide numerous economic development benefits. A study by Iowa State University's Leopold Institute indicated that small meat processors provide 13.3 jobs for every million dollars of meat, which is well above Iowa's statewide average of 4.7 jobs in meat processing of all sizes^x. The University of Minnesota Extension supported this conclusion. In an economic impact analysis for a meat processing facility in Central Minnesota, the University determined it would generate an estimated \$1.8 million in sales, translate to \$2.9 million in economic activity in the region, support 25 jobs, and pay \$1.5 million in labor income^x.

Overview and Objectives

In September 2021, the Agricultural Utilization Research Institute (AURI) and the United States Department of Agriculture, Agricultural Marketing Service (USDA-AMS) signed a multi-year cooperative agreement focused on the Upper Midwest's small meat and poultry processors. For purposes of this agreement, the Upper Midwest is defined as the following five states: Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin.



The five-state project explored opportunities to strengthen industry resiliency and create solutions to position the meat and poultry processors for success. The project was entitled Empowering Local and Regional Meat Processing in the Upper Midwest and was designed as a regional pilot that could be emulated in other regions in the country.

A regional advisory task force provided guidance related to the pilot's main pillars of work, which included understanding the financial barriers facing small meat and poultry processors, conducting a needs assessment to guide technical assistance and business development support, and developing multiple solutions to assist the industry in overcoming barriers. The task force included industry representatives across the five-state region and convened quarterly during the pilot to advise AURI and USDA-AMS staff. Deliverables were completed in 2022 and 2023, and reporting was completed in early 2024.

Methodology

Research Framework and Approach(es)

A multifaceted research framework was employed to comprehensively analyze obstacles and identify possible opportunities facing small and very small meat processors. The key components of the research framework included:

- An extensive [literature review](#) exploring current knowledge, research, and best practices related to small and very small meat processors. This provided a foundational understanding of the current state of the industry, including challenges, opportunities, and potential strategies for improvement.
- A [needs assessment](#) of small and very small meat processors and industry stakeholders identified specific gaps and challenges facing the industry.
- In-depth interviews were conducted at several intervals with key sources, including small and very small meat processors, industry experts, state agriculture departments, meat inspectors, policymakers, business lenders, and other relevant stakeholders. These interviews provided guidance during the development of several key deliverables, including the needs assessment, cold storage assessment, and financial barriers reports.
- Throughout the research process, stakeholder engagement was prioritized to ensure relevant parties provided input into the project. This included regular communication, consultation, and collaboration with industry stakeholders to review and validate findings, solicit additional insights, and co-create solutions.

Data Collection Methods

Needs Assessment:

AURI followed a three-step process to assess industry needs (Figure 1). In the pre-assessment phase, the team aligned on the focus for the needs assessment to explore bottlenecks and challenges facing the regional and local meat industry in the Upper Midwest. Anecdotally, many industry issues were highlighted during the early days of the COVID-19 pandemic and generated a broad concern for the resiliency of the meat industry. The team worked to validate and understand the issues with the goal of developing solutions and recommendations for overcoming persistent issues. This phase concluded with a literature review to better understand the issues.

The [literature review](#) sought out research focused on supply chain impacts and resiliency of very small and small meat processors during and after the COVID-19 pandemic. Although much of the literature focused on the impacts of COVID-19 on large commercial plants, limited information also addressed the impact on smaller processors. A total of 28 works are cited in the literature review, including news articles, industry periodicals, government publications, and academic journals.

Results from the literature review informed the development of a list of survey questions and interviewees as the team moved into the assessment phase. A total of 42 processors and industry partners were identified across the five-state region and contacted by AURI staff. Ultimately, 26 individuals representing 21 organizations across the five-state region participated in the needs assessment. Participants included meat and poultry processors, meat inspectors, state agriculture departments, and faculty from university or community college meat science programs.

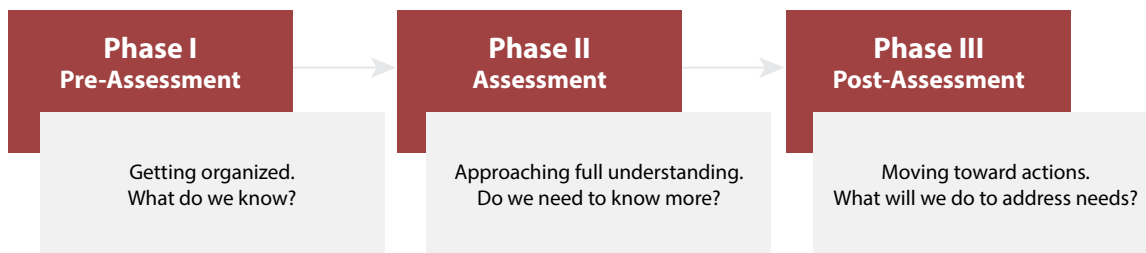
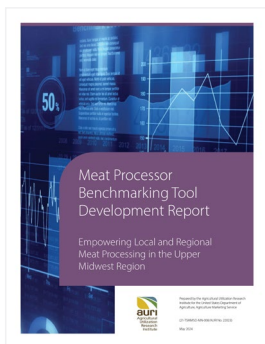


Figure 1. Needs Assessment Three-Phase Model, Credit: Altschuld and Kumar^{vi}

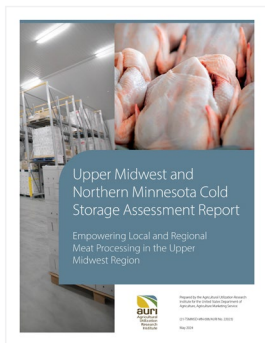
Third-Party Research:

AURI engaged several entities to conduct research relating to the development of a benchmarking tool, the identification of emerging technologies for the utilization of hides and other byproducts from meat and poultry processing, and the need for additional cold storage capacity in the Upper Midwest. Competitive proposals were solicited through an open process for each of the three studies.



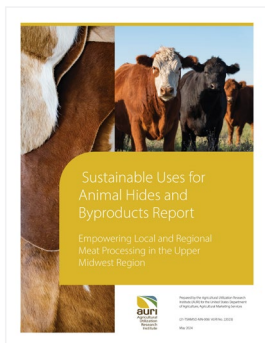
Benchmarking Tool:

A Finance Working Group was created to inform the effort on financial challenges and opportunities. This group identified the lack of comparable business performance information as a financial barrier to underwriting financing for new or expanding meat and poultry processors. AURI conducted research on existing agricultural industry benchmarking tools, including for ethanol production, farm operations, cooperative food stores, and general business operations. A third party developed the [benchmarking tool](#) and a two-step approach was employed. Phase I involved interviewing multiple processors that were representative in terms of geographic location, type of processing, and size of operations. Interviews required two to three hours per processor, with a combination of phone/teleconference interviews and follow-up emails or surveys. Phase 2 focused on developing the tool based on the interviews.



Cold Storage Assessment:

AURI contracted with two third parties to conduct a [Cold Storage Assessment and Feasibility Study](#). Researchers utilized secondary source reviews from available online resources to gather information on cold storage needs in the United States, with a focus on the Midwest. Following the secondary source review, researchers conducted in-depth interviews to provide commentary on their experience in the cold storage sector. Participants were located in the Upper Midwest region and included four independent meat processors with high volume and faster-growing businesses that need additional cold storage; two meat processor association executive directors; three land-grant university staff members; one regional cold storage financier; one cold storage/logistics director who works for one of the nation's leading frozen food manufacturers; and four state meat inspectors. Cold storage facility locations and independent processors were identified and mapped.



Utilization of Hides/Byproducts:

A third party conducted secondary research to identify alternative solutions and innovative uses for animal hides and other byproducts from meat and poultry processing. In exploring [sustainable uses for animal hides](#) and byproducts for very small and small meat processors, researchers focused on technologies that had a technology readiness level (TRL)^{xiii} of 4 or higher,

meaning successful demonstration at laboratory scale, and further categorized findings into three tiers based on the ability of meat and poultry processors to implement them into their business operations. The search process drew upon domestic and international secondary data sources, including patents, scientific literature, news and press releases, conferences, and company directories, as well as crowdsourcing/inventor platforms, technical blogs, technical conferences, etc.

Stakeholder Analysis and Engagement

Regional Advisory Task Force:

The Regional Advisory Task Force was convened to assist AURI in identifying key challenges to sustaining and expanding the meat and poultry processing industry in the Upper Midwest. A total of 25 individuals were recruited to participate in the task force, with individuals representing livestock producers, meat and poultry processors, local and regional economic development organizations, state and national meat industry associations, farm organizations, state meat inspection services, and state agriculture departments. The Regional Advisory Task Force met on a quarterly basis to participate in focus group processes, review progress on various program activities, and exchange information on issues, educational programs, and state-level initiatives related to meat processing.

Finance Working Group (FWG):

An expert group of finance professionals convened to provide insights on financial support challenges and opportunities for the Upper Midwest's very small and small meat processors. As part of the cooperative agreement, AURI staff worked with AMS staff to develop a list of representatives that included a variety of institutions, as well as a diverse group of professionals and the communities they serve. Roughly 20 representatives from food policy centers, community development financial institutions (CDFIs), commercial lenders, financial institutions, local economic development organizations, and other meat industry leaders from across the Midwest and the United States accepted an invitation to serve as part of the Finance Working Group. AURI convened the working group on three separate occasions. AURI's business development professionals met with stakeholders between meetings to further vet concepts and review deliverables.

Deliverables

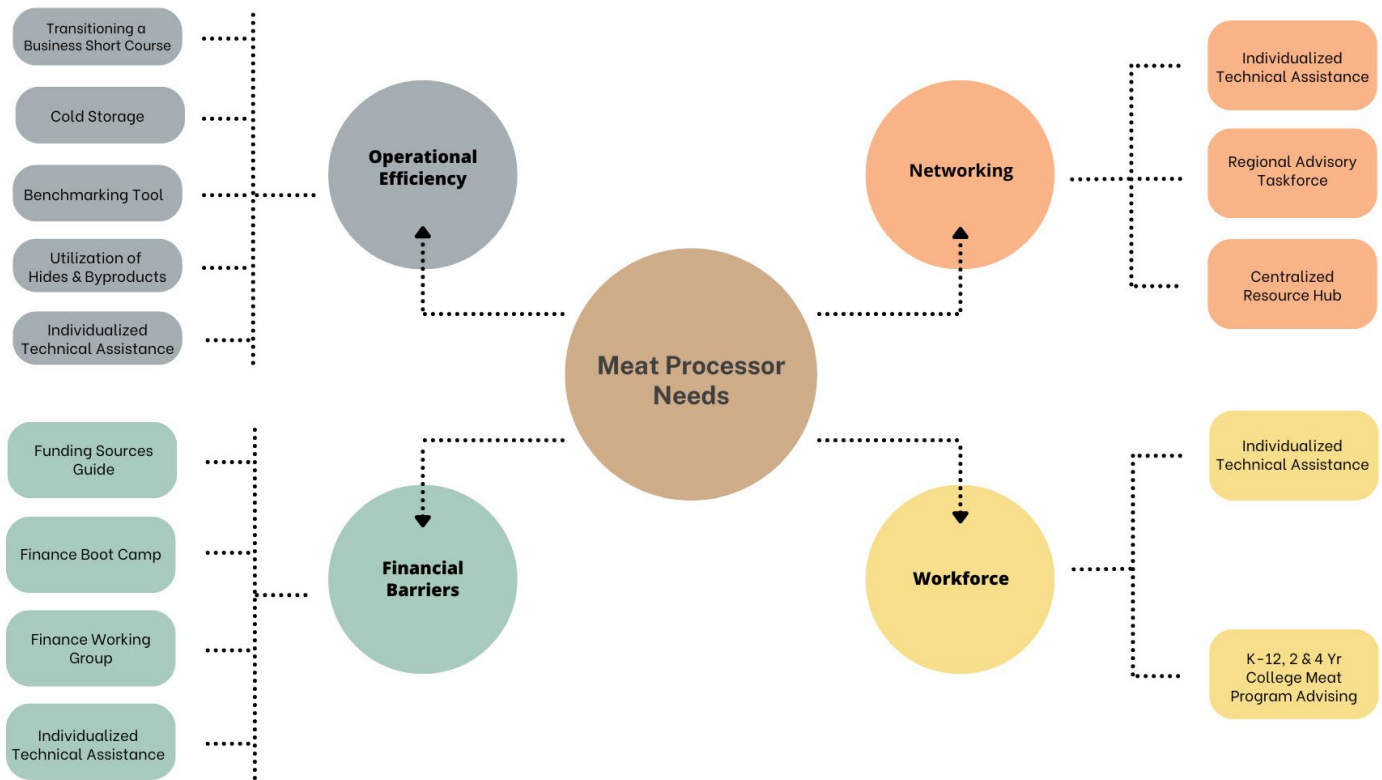
Needs Assessment

The [needs assessment](#) identified bottlenecks and challenges facing the local and regional meat and poultry processing industry and was a primary driver in the identification of the pilot's deliverables. Prior to conducting the needs assessment, AURI performed a literature review to inform survey questions. From the interviews, the following areas were identified:

1. **Supply Chain Challenges:** The COVID-19 pandemic created supply chain disruptions from farm to fork. For local and regional meat processors, it was not uncommon to see backlogs and wait times increase significantly for inputs and animals.
2. **Networking and Collaboration:** Stakeholders cited the need for better connections within the industry. They would benefit from greater awareness of peer-to-peer and mentorship opportunities.
3. **Operational Efficiency:** Small meat processors often lack dedicated staff to handle essential tasks such as regulatory compliance, finance, marketing, sales, and human resources, leading to difficult operational trade-offs. Moreover, much-needed upgrades are difficult to realize thereby forcing processors to operate antiquated facilities that demand extra attention and are costly to maintain.
4. **Regulatory Compliance:** Participants noted insufficient state and federal inspectors. Information related to inspection requirements needs to be provided in easy-to-understand formats. Several respondents noted a need for proactive information and guidance regarding the start-up of new facilities and ongoing regulatory compliance for aging facilities.
5. **Workforce:** Participants cited concerns related to their labor pipeline and generating interest in meat industry careers, as well as the need to establish programs at the secondary and post-secondary levels to prepare the future workforce.
6. **Education and Training:** While related to workforce needs, processors cited multiple needs to train the existing labor force. Topical issues span from meat cutting and operations for laborers on the processing floor to strategic business topics for owners and managers.

AURI developed several deliverables as follow-on activities based on feedback from the Regional Advisory Task Force. A mind map of deliverables and activities portrays an overall view of the efforts comprising the project; see Figure 2 below.

Figure 2. Mind Map of Upper Midwest Pilot Project



Resource Database

Knowledge and awareness of existing resources were critical gaps for many meat and poultry processors in the Upper Midwest. Specifically, processors indicated it was time-consuming to search online for reliable guidance and opportunities. Therefore, AURI categorized over 160 resources in an easy-to-navigate online [database](#). This tool provides direct links to resources for each of the five states as well as at the national level.

Financial Barriers Report

This [report](#) describes efforts to understand the financial barriers facing meat and poultry processors. AURI and USDA-AMS recruited experts to serve on the meat processing finance working group (FWG). The FWG identified challenges facing the local and regional meat processing industry and explored solutions that entities could utilize to accelerate their ability to start or expand a meat processing business, key findings from which are described in this document.

Funding Sources Opportunities Guide

AURI and USDA-AMS created a tool to service meat processors seeking financing for capital projects. The [online Funding Sources Guide](#) provides an overview of available federal, state, and regional funding opportunities relevant to local and regional meat and poultry processors.

Benchmarking Tool

AURI worked with a third party to research and create a [benchmarking tool](#) for local and regional meat processors. This tool benchmarks the financial and operational performance of very small and small meat processing facilities. The tool and several supporting documents were created in preparation for its launch to processors in 2024.

Cold Storage Assessment

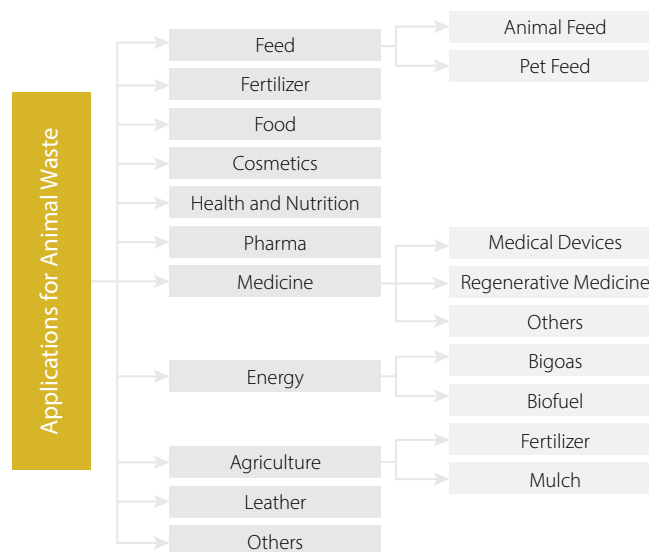
Cold storage is a necessity in meat processing operations. Aging facilities, equipment, and HVAC/air flow systems are challenging to upgrade due to high replacement costs. Therefore, AURI explored the cold storage capacity in both the five-state region and a defined local region in northern Minnesota. [Key findings](#) identified a need for additional cold storage among larger regional independent processors located outside areas with higher cold storage penetration. This also proved true for smaller processors with consistently high-volume production serving high-volume customer segments such as retail, hospitality, food service, and schools. There is a general need for more cold storage located in closer proximity to meat processing facilities, resulting in easier access and lower transportation costs.



Utilization of Hides and Byproducts Guide

This [study](#), entitled Sustainable Uses for Animal Hides and Byproducts, identified strategies for waste management of animal hides and byproduct solid waste generated from very small and small meat processing and rendering establishments. It explores waste management techniques to reduce the costs of byproduct disposal through proper classification, segregation, and handling of waste streams, as well as opportunities to add value to hides and other byproducts through pet food markets, niche consumer products, composting, and anaerobic digestion (Figure 3).

Figure 3 Applications for Animal Waste



Short Courses

Short courses were of great interest to participants. Based on the task force rankings, [three online short courses](#) were conducted including financing a meat processing business, byproduct and hide utilization, and transitioning a meat processing business for processors interested in selling their business.



Individualized Technical Assistance

Throughout the project, AURI provided direct technical assistance to eight meat and poultry processing enterprises. Individualized technical assistance included business development support, such as feasibility analysis, market assessments, and financial planning. AURI food science and meat specialists also assisted clients with a range of technical issues, including product development, test production, labeling, and the development of Hazard Analysis and Critical Control Points (HAACP) plans.

Benson and Turner Foods and Jenniges Meat Processing are examples of recipients receiving individualized technical assistance. AURI assisted Benson and Turner Foods as it developed a new, federally inspected slaughter and processing facility. AURI's business development staff assisted the project owners with business planning and efforts to identify and secure financing. The project received substantial state and federal support, including a \$4 million loan guarantee under the USDA Food Supply Loan Guarantee program and a \$963,000 grant under the USDA Meat and Poultry Processing Expansion Program. Jenniges Meat Processing received assistance in its development of a new 12,000-square-foot slaughter and processing plant to replace its small and obsolete facilities, tripling its capacity. Financing for the project included a loan guarantee under the USDA Intermediary Relending Program through the Minnesota Department of Agriculture. The new, federally inspected plant commenced operations in January 2024.

Conclusion

Summary of Key Findings and Lessons Learned

While the project had region-wide representation, it was, at times, more heavily representative of Minnesota due to a deeper relationship base. Nonetheless, participants from other states were engaged throughout the process as part of the Regional Advisory Task Force. The task force members expressed a desire to continue to convene post-project whenever an industry or policy change justified it.

A key goal of the project was to understand the financial barriers facing local and regional meat processors and how they might be addressed. Funds are often limited for custom operators, and grants can be difficult to secure for state and federally-inspected facilities. Even as grants have been awarded across the region, inflationary pressures have slowed progress on expansions. The pilot provided financial literacy training to processors and service providers alike and initiated the development of a benchmarking tool to assist processors in the future.

In terms of supply chain challenges, some can be mitigated by creating strategic business relationships around offsite cold storage or more capital-intensive utilization options for hides and byproducts. However, these efforts also confront inflationary pressures, lack of investor interest in low-population centers, permitting challenges, and public pressure.

There is a significant, ongoing need for valuable services in the areas of training and education, individualized technical assistance, and facilitating industry and supply chain connectivity and collaboration. The creation of the MPPTA was an innovative approach employed by the USDA-AMS to increase the likelihood of new applicants for federal grants and assist them in the successful execution of these awards. Awareness of the network's ongoing availability should be expanded to the largest extent possible. While many new resources were created as part of the project, the importance of leveraging existing resources cannot be overlooked. Many resources were uncovered and incorporated into a resource database. Many organizations across the United States, including the Niche Meat Processors Assistance Network and several academic institutions, provide a wealth of information and expertise to the meat and poultry industry.

Policy Implications

A thorough review of the deliverables will yield a complete view of the many areas that would be well-served by policy interventions, particularly funding opportunities and inspection requirements

Federal and state funding opportunities as they relate to the eligibility of meat processors, as well as the support of adjacent opportunities, such as cold storage and waste utilization, need careful review. Specifically, future funding opportunities should consider:

- Simplifying feasibility study templates aimed at smaller processors with limited resources. Feasibility study requirements can be challenging to satisfy due to short turnaround times, difficulties finding qualified consultants, high expenses, and unrealistic or inaccurate calculations. Expanding the eligibility for small-scale construction projects through more favorable cost-shares or project minimums and including custom-exempt processors as eligible applicants.
- Expanding eligibility of off-site cold storage facilities in areas with low population penetration, often in areas closer to meat processors.
- Offering eligibility to projects that specifically reduce the cost of byproducts and hides disposal or projects that add value to these waste streams.
- Offering eligibility to automation technologies available to very small and small-sized processors that span the needs of a meat enterprise, from slaughter and processing to operations and management.

Finally, there is a need for more inspectors at both the state and federal levels. Regulatory compliance was a common theme throughout the multi-year pilot. There is a general need to better understand complex regulations. The shortage of inspectors compounds the challenges facing entities seeking clarity. Information is needed related to inspection requirements, status, and the process of transitioning to a different inspection level.



Sustaining Project Outcomes

AURI has provided services to the local and regional meat industry for much of its 35+ year history. The organization maintains a USDA-inspected meat laboratory and participates in the MPPTA as a Technical Assistance Provider. In this role, AURI will promote and maintain the resource database as a centralized hub for a multitude of regional meat processor resources. New and improved resources will be added as they become available. AURI is also committed to hosting future meetings of the Regional Advisory Task Force, given the members' feedback on the value of the task force convenings. AURI will seek opportunities to collaborate with partners in the five-state region and beyond to leverage the project's deliverables and explore new opportunities such as training and educational seminars and webinars. Figure 4 below provides a list of topics to consider:



Figure 4. Future Educational and Training Opportunities

AURI is actively involved in the identification of higher-value uses for agricultural processing waste streams. The organization is working in the areas of anaerobic digestion, renewable natural gas, coproduct valorization, and green fertilizer. These opportunities may provide valuable market pathways for local and regional meat processing sector byproducts.

AURI will seek opportunities to increase processor awareness and participation in benchmarking efforts. This could be accomplished by expanding the benchmarking work initiated by AURI or through other regional pilots. Subsidizing subscriptions at some level in the early years would likely encourage greater participation, resulting in a more robust and impactful tool. State membership organizations should explore strategies to increase participation and appeal to those not currently enrolled, such as trial memberships or services offering a collaborative matchmaking opportunities or mentorship programs.

Closing Remarks

Through its research, AURI discovered many common challenges existing nationwide for regional and local meat processors. Yet,

the solutions are not necessarily universal. Different regions across the country have unique characteristics to consider, such as concentration of livestock production, concentration of meat processors by size and inspection status, workforce readiness, as well as differences related to proximity to major markets and metropolitan areas. These distinct attributes may require a different strategy to create a more resilient meat and poultry processing industry.

List of Table and Figures

Figure 1: Needs Assessment Three-Phase Model, Credit: Altschuld and Kumar

Figure 2: Mind Map of Upper Midwest Pilot Project

Figure 3: Future Educational and Training Opportunities

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