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Michigan's Local Food System: The Case of Meat
Processing**

**by
Steven R. Miller**

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Opportunities and Barriers to Growing Michigan's Local Food System: The Case of Meat Processing

Steven R. Miller

January 2017

Abstract:

This paper details some of the challenges that occur within and between the three tiers of the Michigan meat value chain; at the producer, processor and regulatory level and how they impact meat offerings in local food channels. Considerations for all three tiers include price points and volume, labor issues and reported inconsistencies by those that enforce regulation within the state system of regulations and federal regulations.

Funding for this research was provided by the United State Department of Agriculture (USDA) National Institute for Food and Agriculture (NIFA).

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Introduction

The Michigan State University (MSU) Center for Regional Food System Livestock workgroup is a group of cross-disciplinary MSU faculty and staff and MSU Extension staff that work together to provide research, education and outreach to identify and address local and regional challenges faced by businesses and organizations within the Michigan meat value chain.

In 2014, and in response to Michigan livestock stakeholder feedback, the United State Department of Agriculture (USDA) National Institute for Food and Agriculture (NIFA) funded work to address a series of challenges that are faced by meat value chain businesses. In a series of meetings, Michigan livestock processors expressed common challenges that hinder the development of more local and regional meat channels to markets in Michigan. This paper details some of the challenges along three tiers of the Michigan meat value chains; at the producer, processor and regulatory level. It seeks to dig deeper into the challenges in the Michigan meat processing industry, and through documenting some of these challenges, enable businesses, regulators, educators and policy makers to better address bottlenecks in processing meat for local and regional meat marketing in the state of Michigan.

Research for this paper involved conversations with a series of small meat processors in Michigan, regulators at the Michigan Department of Agriculture and Rural Development (MDARD) and outreach specialists that work with meat businesses in Michigan on a regular basis. The report presents the regulatory environment that Michigan meat processors, producers and regulators work in and some industry and regulatory challenges that may hinder efficiencies in the meat processing industry.

Local Meat Processing in the United States

While local food markets comprise a small share of food expenditures, consumer demand and interest in local food systems is growing. Despite a growing local food movement, locally-sourced meat sales have trailed the growth of crop production for local sales (Johnson, Marti, and Gwin 2012). According to a 2007 ERS report, about 44.1 percent of all vegetable and melon farms participated in some form of direct sales compared to only 6.9 percent of livestock operations (Martinez et al. 2010). Several factors may contribute to this. First, consumers most associate local foods with fresh produce like vegetables, fruit and berries (Johnson, Marti, and Gwin 2012). However, consumer recognition of the role of meats in local food value chains is increasing. Second, livestock producers have limited access to local federally-inspected processing facilities that allow them to market products to niche retail outlets. The processing facilities available often do not have regulatory approval for processing consumer products or have a business model that excludes specialty processing for smaller producers. Processors with sufficient capacity often choose to exclusively market high-volume, low margin products. Limitations to appropriate processing facilities may be a primary barrier to expanding meat sales through local food systems (Barry and Pirog 2013, Schwehofer et al. 2014).

Meat processing regulation

Meat processing is one of the most regulated and inspected industries in the U.S. Inspection occurs at two different stages of meat production; slaughter and fabrication.

Slaughter

All retail sales of meat and poultry production must be done in a continuously inspected slaughter facility (Johnson, Marti, and Gwin 2012). Larger slaughter facilities generally produce boxed primal and subprimal cuts, but may also provide retail cuts. On-the-rail carcasses, as quarters and large primal cuts are much less common over the past 20 years, as processors have found vacuum-sealed cuts placed in boxes to be more efficient for distribution (Riley and Hiemstra 1981). Federal slaughter inspection can be sidestepped only in the case of custom exempt processing. Custom processing is discussed below.

Fabrication (Cut and Wrap)

The second is inspection of the fabrication process. This stage of meat processing, also called “cut and wrap,” transforms the federally inspected quarters, primal and subprimal cuts into retail cuts for retail sales. Today, fabricators can source primal and subprimal cuts from all over the U.S. Large scale fabricators often source boxed meats from large cattle producing regions and process them into retail cuts. Smaller fabricators can also source meats from outside the state, but likely have more flexibility for sourcing from local suppliers.

Retail sales of meat at the slaughter and fabrication stages must be inspected in one of three ways:

- Federal inspection: Allows interstate sales,
- State inspection: unless the state and facility is in the Cooperative Interstate Shipment Program, sales are limited within the state, or
- Talmadge-Aiken: State inspection acting as agents of the USDA Food Safety and Inspection Service, allowing interstate sales.

All fabrication inspections require their operations follow similar food safety procedures and guidelines, where state inspection must conform with or exceed federal minimal standards. As Talmadge-Aiken inspection systems are rare, the majority of retail meat is inspected under one of two meat and poultry inspection systems, 1) Federal inspection or 2) State inspection. Only 27 states have state inspection systems that allow for consumer sales.¹ The state of Michigan dismantled its state-inspection in 1981 (Schweihofer et al. 2014), while the three states bordering Michigan (Indiana, Ohio and Wisconsin) continue to have state inspection programs.

Most meat in the U.S. is processed by a few large-volume, federally-inspected plants (Johnson, Marti, and Gwin 2012). More specifically, in 2015, about 98 percent of cattle, 99 percent of hog and about 90 percent of lamb and sheep slaughter were done in federally-inspected facilities (U.S. Department of Agriculture 2016). These numbers are largely unchanged from 2010 (Johnson, Marti, and Gwin 2012). Large processors benefit from uniform processes and reduce transactions costs by transacting with a limited number of large livestock producers. The business and marketing models of these large-volume processors often dictate wide distribution networks that cater to regional or national markets. Many are

¹ Two of these states only have state meat inspection and exclude poultry.

vertically integrated with wholesale distribution and operate under their own label – providing no fee-for-service processing for independent producers. Larger and medium-sized processors that do provide fee-for-service processing largely rely on streamlined processes that minimize costs and facilitate significant cost savings through their higher-volume customers. Because volume is a key source of profitability, such processors locate in regions with large suppliers and establish long-term relationships with livestock producers (Johnson, Marti, and Gwin 2012).

Smaller independent producers, or those seeking to market livestock products in niche markets, cater to smaller markets and are often excluded from working with many federally inspected processors. Insufficient scale of operations makes these higher-cost accounts for larger processors. Even when located near a USDA-inspected processing facility, small to mid-sized livestock producers may be forced to seek out smaller slaughter and packing facilities that are willing to take on their smaller-sized accounts. Higher transportation costs due to travel distance to processing facilities, logistical and marketing mismatches with processors (Johnson, Marti, and Gwin 2012) and biosecurity issues associated with small batch processing (Crutchfield et al. 1997) may be other factors that contribute to smaller livestock producers' exclusion from major processing facilities. All of these factors contribute to small independent suppliers' limited access to federally inspected processors.

In states with state inspection, small to medium sized livestock producers may choose state inspected processing facilities over federally inspected processing facilities. While it appears there is no cost advantage to state inspection, state regulators may afford a level of responsiveness to processor needs that cannot be realized through federal regulators. The potential markets for state inspected facilities may be limiting compared to federally inspected facilities, as these processors tend to be smaller and to be more receptive to small-batch processing for independent producers. However, economies of scale come from large-batch processing of homogeneous livestock. Small-batches require set-up costs that raise the total processing costs per pound, decreasing the competitiveness that commodity livestock processors experience. Because of this, small batch processing favors specialty labeled meat products, like local, grass-fed, certified organic, etc. (Johnson, Marti, and Gwin 2012). Such value-added attributes afford greater consumer value per pound, thereby commanding higher prices that offset the higher processing costs. However, the price gains of such attributes may be eroded with shipping distance to and from these processing facilities.

The national literature has also recognized the role of mobile slaughter units and mobile cut-and-wrap units as a means of alleviating local marketing constraints. These mobile units are by design, ideal for meeting small-batch processing needs of those marketing directly to retail (Johnson, Marti, and Gwin 2012). Rather than ship livestock to the processing facility, mobile slaughter units move to where the livestock are. This may include an individual farm or a centralized location for aggregating livestock of many producers. Few examples of mobile slaughter units currently exist, but those that do, tend to be federally inspected. Despite growing interest in mobile slaughter units, many obstacles exist. First, mobile slaughter units must be accompanied with sufficient and acceptable on-board or on-location refrigeration for carcass chilling and storage. Additionally, the unit must be accompanied by a cut-and-wrap facility, less on-site processing be limited to available storage of processed units before relocating to a cut-and-wrap facility. Furthermore, because offal constitutes a sizeable portion of total processed

weight, sufficient on-site or mobile waste facilities are required. Often mobile slaughter units will operate next to waste processing facility or a brick-and-mortar cut-and-wrap facility to reduce the necessary equipment housed on the mobile unit.

Local Meat Processing in Michigan

In Michigan, meat products largely fall into three categories:

- 1) USDA inspected and
- 2) Retail exempt.

USDA Inspected processing

Any Michigan meat processor is able to operate under the USDA inspection system for all or part of their operations. Gaining access to USDA inspection by obtaining a grant of inspections requires, among others, a written and validated Hazard Analysis and Critical Control Points (HACCP) plan and a written Sanitation Standard Operating Procedures (SSOPs). Those processors opting out of federal inspection largely attribute costs as the primary obstacle (Schweihofer et al. 2014). To this extent, the costs, which include that of record keeping and processing of paperwork, as well as space and costs required to host an on-site USDA inspector, mandate that smaller processors, in terms of output, are less likely to be able to cover the costs of USDA inspection. They largely see this cost as a combination of both fixed and variable costs, where the fixed costs exist regardless of the size of operation. Such fixed costs can be substantial in both the investment in maintaining the status of USDA-inspection and in additional labor required to manage compliance. Those facilities with relatively high sales are better able to spread these fixed costs over more sales, while smaller processors would be disadvantaged by fixed costs distributed over fewer sales.

Retail Exempt processing

Retail exempt processing imposes significant restrictions on the channels by which meat reaches final consumers. Despite being categorized as “retail exempt,” an exempt processor is subject to a Michigan Department of Agriculture and Rural Development (MDARD) inspection. However, unlike USDA inspection, an on-site MDARD inspector is not required to inspect the facilities daily operations. A retail exempt processor may be authorized to engage in limited wholesale transactions with food service intermediaries, but not retail intermediaries. Retail exempt cuts can be purchased as retail if sold directly to the customer through the processor’s own retail window. That is, exempt processors cannot provide retail cuts on a fee-for-service basis for client producers. Rather, Michigan livestock producers seeking to supply third-party retailers are required to seek a USDA-inspected processor for processing their livestock.

Custom Exempt processing

A third category of processing where meat products can be produced but not sold, is known as “custom exempt processing.” Custom exempt is the most restrictive in terms of where the meat can be used, as custom exempt meat may only be consumed by the owner of the live or culled animal, the family of the

owner or non-paying guests. However, as a practice that increases consumer access to small livestock producers, the livestock owner can sell the live species to consumers before slaughter, where the consumer takes ownership for purposes of process. While this practice is not mainstream, it is common (Schweihofer 2016).

Michigan has many small meat processors that are not USDA inspected and operate as custom exempt. There are regions of the state, especially in the Upper Peninsula, with limited coverage to even custom exempt facilities. Many of these processors serve a specific purpose – to process, under custom exempt status, customers’ hunting carcasses. Some of these processors may seek to fill the seasonal gaps by processing livestock outside of hunting season, but are limited to processing for the animal owner’s own consumption if not operating under a retail exempt status or as USDA inspected.

Specialty Meats

A class of meat products termed specialty meat, deserves additional attention. Specialized meat processors are those that process:

- cured meat,
- smoked meat as a method of food preservation rather than as a method of flavor enhancement,
- meats using food additives or components as a method of meat preservation rather than as a method of flavor enhancement or to render meat so that it is not potentially hazardous, or
- package cooked meat using a reduced oxygen packaging method, such as vacuum packaging.

Consumer demand for specialty meats has increased steadily in recent years, giving rise to new Food and Drug Administration (FDA) standards in the FDA Model Food Code in 2009. Under this Food Code, specialized meat processors are required to have a food safety plan (HACCP) and variances detailing safe practices for handling, processing and packaging cured and smoked meat products. Because the processes for making and packaging specialized processed meats varies by product, no single code exists that covers all products, processes and packaging. Rather the HACCP and variances are establishment- and product-specific, providing processors a great deal of entrepreneurial latitude in developing and bringing products to market. Since each establishment validates their own HACCP and variances, implementing federally consistent standards for specialty meat safety is complex and time consuming.

The Michigan Department of Agriculture and Rural Development (MDARD) worked with the Michigan Meat Association (MMA), an organized group of Michigan processors, to streamline the process of validation and verification of safe specialized meat processing, and to establish flexible processes for validation and verification of safe handling processes. Through this, a simplified application process was introduced and a long, three-year window for implementation was provided with a March 1, 2015 enforcement. To prepare the industry for these new standards, MDARD provided funding for Michigan State University Extension education, training programs and hired five processing seniors (specialists in specialty meat processing safety) to expedite meat variance approvals. These specialty meat regulators were trained and tasked with providing regulatory approval of specialty meat processes.

While several years in the making, and with extensive processor input, it is the authors' perception that this process of transition is a source of frustration between processors and state regulators and is influencing other regulatory spheres. Specialized meat processors are subject to specialty meat processor inspections in addition to conventional meat processor inspections. However, our research showed that processors largely see both sets of regulations as one and the same, and having multiple inspections, has generated a sense of overregulation with competing emphases. As expressed by processors, the processing seniors were an additional layer of inspectors to the already cadre of facility inspections. Since these inspections focused on specialty meat processing, their focus on specific details was different from the focus of other inspections, leading to a perception of inconsistent regulations. Such conflation of the regulatory system with few bright and distinctive lines of appropriate and inappropriate practices has frustrated processors. In addition, not all processors realized that their specialty meat processing required additional regulatory inspection. Once imposed, they saw this regulation as further state encroachment on their operations and what some may consider their hobbies.

Some sources of processor frustrations arose from missteps during this transition. According to MDARD, the state made extravagant efforts to prepare and collaborate with processors to prepare for this new regulation. However communication flows between the industry and MDARD were not as robust as they should have been (Besey 2015). Additionally, MDARD observed that while a three-year window was provided for processors to have their variances approved, a last minute application from processors increased the paper processing load for MDARD, creating logistical hang-ups and a backlog of regulatory approvals. Despite initial industry buy-in for the validation and verification of specialty meat regulation, there was a general feeling among processors that they were sold a "bill of goods" in the outcome.

Markets for Locally-Sourced Meats

The extent to which a local supply chain for meats exist through conventional channels is very difficult to measure and is likely to be extremely limited. Consumers' interest in local foods seems to be most pronounced with fruits and vegetables, where the consumer has a more candid concept of its fresh state (Mintel Group Ltd 2014). Despite the slow consumer uptake of locally-sourced meats, a growing trend exists toward more locally-sourced foods (Torres, Barry, and Pirog 2015). As asserted by the National Restaurant Association over the last six years, the number one food trend in restaurants is local meats and seafood (Association 2016). With this trend, consumers have shown increasing interest in assuring humane treatment of animals and in value-added meat products espousing "organic" or "grass-finished" labels (Curtis et al. 2006). Both attributes are often found and sought after in locally-sourced meats (Johnson, Marti, and Gwin 2012). Local demand for local meats appear most robust through food service industries and finer dining establishments where consumers go to indulge, or through retail establishments where consumers shop for special occasions. This connectedness, "from vine to taste," is less prevalent the more processing takes place before consumption.

Processors that sell through intermediate retail channels are required to be federally inspected. However, many smaller Michigan USDA inspected processors that operate through intermediaries largely supply the food services sector, as they feel they are locked out of big-box grocery stores. This is

not to suggest that Michigan livestock producers and processors are locked out of big box grocery stores, as many do supply retailers like such as Costco, Kroger and Meijer. However, this is mostly limited to large-scale providers. Rather, small producers have a general perception that big-box stores are largely not interested in differentiating meat offerings by geography, and that those processors that sell to big-box stores largely purchase primal and subprimal cuts without regard for geographic source.

Michigan's meat processors face a number of hurdles, including a competitive market dominated by conventional retail channels, regulation and an unfavorable labor market for meeting processors' needs. Hampering the development of local value chains is the lack of distribution opportunities for local foods (Vogt and Kaiser 2008). That is, conventional channels designed around efficiencies reached by high volumes, undermine the value points of competing specialty or niche products. Efficient, mid-scale aggregation, processing and distribution systems devoted to serving local food needs are largely absent in Michigan, where local meat products can command premiums of 50 to 100 percent of conventional productions (Knudson 2015). Building dedicated supply chains is costly and those costs need to be spread over minimum volumes to be profitable. Large-scale processors are effective at dispersing costs over greater volume. That is, they market products with attributes sought by the greatest number of consumers at a given price point. Local food demand, making up a small but growing sector of the market, is still limited in the numbers of consumers that can be reached and their minimum profitable price point. Justifying higher prices requires distinct differences in product attributes that justify the higher price such as local, organic, antibiotic-free or grass-fed meats, and consumers have different perceptions of the values they are willing to pay for these attributes.

In addition to market barriers, smaller-scale processors (those most drawn to the local food movement) often lack the capacity, equipment, expertise and regulatory acumen to effectively operate in mainstream channels. Regulatory barriers for supplying local food channels are relatively more burdensome for smaller meat processors. Relative to crop growers, who can market directly to consumers with minimal investment, animal agriculture producers must overcome significant regulatory barriers irrespective of the size of their operation. From a societal perspective, this is by design, with meat consumption food safety issues more imposing than that of fresh fruit and vegetables.

There are several bottlenecks throughout the small-scale processing system that can restrict the capacity of the Michigan meat processing industry for producers (Barry and Pirog, 2014). Michigan's fee-for-service processors often do not have holding capacity sought by livestock producers. This may include limited livestock holding facilities which can result in difficulties in producer's ability to plan for production. For producers that travel long distances, limitations on holding capacity may require the producer to limit the number of units they can send to processor – thus imposing multiple trips and increased costs for the producer. Similarly, limited refrigeration storage for carcasses reduces the throughput of processors. This necessitates additional logistical planning for the producer that can increase costs. Chief among these costs is hauling partial loads. If the producer intends to ship the processed carcasses back to the farm, this can further increase the number of trips for the livestock producer.

The most successful local supply chains for at home consumption appear to be those in limited retail channels like processors' own retail windows, where consumers choose to purchase because of the attributes they ascribe to these purchases. For retailers and restaurants, consumer requests for locally-sourced meats may be a compelling reason to seek local sources. Restaurants seeking to differentiate their menus increasingly see local attributes as a viable option (Mintel Group Ltd 2014), capitalizing on consumers' irregular indulgence expenditures. Alternatively, consumers purchasing from grocery stores are less likely to associate the purchase to any particular region of production. Consumers seeking at-home indulgences are more likely to view specialty retailers for local meats and poultry purchases for not only the quality attributes of their purchases, but also for the services and preparation guidance.

In summary, three dominant market features impact in local meat production; 1) lack of consumer demand in sufficient scale; 2) lack of distribution resources; and 3) logistical challenges. These features all contribute to system-wide inefficiencies and may add costs to the production of local and regional meats. The higher costs associated with small-batch, local meats make it a high priced product, which limits its broad market appeal. However, we hesitate to call this a market failure that warrants intervention. A market failure occurs when the market cannot provide goods at the socially desirable quantity, leading to inefficiencies in the market place. A paucity of demand for local meats at a given price point may signal that consumers are not willing to pay that price for such products. That is, consumers do not value that product enough to make it a viable market. If producers can lower the cost to match consumers price point, they can create a viable market. Producer segments with relatively high costs to other segments are said to have a competitive disadvantage. Niche market strategies can be used to build market share sufficient to surmount scale economies.

One strategy for using niche marketing to expand sales is to capitalize on the unique attributes that more conventional markets cannot achieve, thereby justifying the higher price. Expansion through this niche channel then becomes a means for reducing costs and appealing to a broader consumer base. The second is to generate scale economies through collaborative efforts. In this, market participants partner to build out efficient processing and distribution networks that bring the costs of getting products to consumers down to consumers' preferred price points.

Several strategies may exist for industry growth. One option is to increase consumer interest in locally-sourced meats through a concerted marketing effort, with the aim of creating sufficient scales to lower production costs. Another option is to build out the existing infrastructure or develop new infrastructure to supply local networks at lower costs. Both of these are directed at the same outcome: increase volume to take advantage of lower per-unit costs. Both may be accomplished with high up-front costs, potentially through a collaborative marketing or distribution channel. They will also work best region-by-region, starting with the most populated regions where short distribution investments can be spread over a larger market. Success in one market signals the next markets to pursue similar strategies. Before embarking on such a strategy, a feasibility assessment will be required to assess the true potential market size, existence and extent of possible economies of scale and consumer's true willingness to pay for local meats in each market.

Labor Markets

Finding qualified labor was among the top 3 challenges that processors expressed in a 2014 Michigan Meat processing capacity survey (Schweihofer et al. 2014). Meat processing is a technical trade, requiring skill and training. Unlike other states, Michigan currently does not have a secondary education program for this trade (extension: Issues - Innovation - Impact 2014), rather processors must largely rely on on-the-job training. As most employees are trained on the job, starting wages tend to be relatively low, and turnover tends to be relatively high. Firms may find themselves in the precarious position of investing in training for workers that are likely to leave within a short window of time. While employees come from all walks of life, young workers are particularly drawn to this field due to minimal work experience required. Some processors contend that these young workers often lack the necessary work ethic to remain employed in this arduous profession. Labor economists may also attest that relatively low wages and minimal promise for advancement in wages and position may also contribute to high turnover.

Several attributes may contribute to the challenge in building quality workers in this trade. First, on-the-job training portends job-specific skills that limit transferability to other jobs. That is, it may negatively impact the workers' perceived value of the skills gained. A training/certification program through community colleges or trade-schools may be one option for circumventing this obstacle. It can generate two outcomes toward this end. First, it would provide greater incentive for the worker to invest in skills training, as such training would be more transferrable than on-the-job training. Second, such training may generate enhanced labor productivity, affording higher wages to new hires. The second obstacle is that this is an arduous profession, requiring both might and skill. The work hours can be long, depending on the season, and the work environment may not be inviting compared to other professions. This field demands long hours standing on hard cement floors, regular trips into walk-in freezers, and the handling of heavy animal carcasses. Encouraging workers to enter and remain in this field requires wages and professional development opportunities within the industry that sufficiently attract workers in this trade.

Another issue that contributes to labor challenges is the strong cyclical nature of business. Seasonal demand for agricultural processing and game animal processing largely overlap, starting in late August to the end of December. This overlap exacerbates the seasonal fluctuations of those processors that operate in both categories. The cycles posit staffing challenges for processors, where retaining talent is already a challenge. Rather than staff-up to meet seasonal demands, processors rely on existing staff levels to cover the seasonal variation. They largely do this by paying overtime during the high season to balance excess capacity in other months. Underemployment in off seasons may encourage existing workers to re-employ.

In talking with processors regarding labor market issues, discussions never turned to wages being too high, but rather that firms cannot afford to pay higher wages because of tight margins. Increasing labor productivity can increase processor margins, freeing up a greater share for investing in workers. Processors may opt to pay a premium to keep the limited supply of workers on hand. Mixed with significant seasonal variation in demand, underutilized workers in the offseason are retained to assure

availability during peak seasons. Higher labor productivity during off-seasons may reduce off-season cycling of workers that leaves the processor with limited skilled staffing for meeting high-season demand.

One of the most direct approaches to productivity enhancements is through workforce training offered by educational institutions like community colleges and trade schools (Dearden, Reed, and Van Reenen 2006). Despite this being a potentially expensive and difficult to implement proposition, it could markedly impact labor market constraints and subsequent local and regional meat supply. First, as alluded to earlier, on-the-job training may be viewed by workers as less attractive than a third-party certification awarded through formal training. A certificate could provide an incremental level of improvement and industry attractiveness, as those completing the training are assured of a certain level of job-marketability over on-the-job training. In addition, having a trained workforce means less costly on-the-job training and greater labor productivity of new and potentially ongoing workers. That is, as workers see themselves as being more in a skilled profession, with higher wages, labor turnover will decrease. With both lower turnover and reduced training costs, we should expect higher productivity and subsequently wages to increase without hindering already tight budgets.

It should be noted that a critical mass of participants in workforce training is necessary to commit community and trade school willingness to develop such training for the meat packing industry. That is, with limited student interest in enrolling in such programs, the task of selling such a program to educational institutions is much more challenging. In effect, demand must exist for educational institutions to invest in developing a curriculum for meeting industry needs. This contradiction can only be remedied with solid commitment of the industry to employ those that go through the training.

higher wages motivate workers and reduce employee turnover. That is, by setting wage above one's reservation wage (minimum one is willing to accept to take on a job), the worker has less inducement to seek alternate work options that may lead to career exits (Pencavel 1972). Here exists another contradiction. First, Michigan processors must contend with low margins, requiring lower wages to earn a normal return. That is, offering higher wages can put the business in the red in the short-run. However, higher wages can provide a productivity boost that may result in higher future margins. It is a lofty risk for a firm to offer higher wages in hopes that productivity gains can offset those higher costs well into the future. Regardless, the model has been shown to be successful in industries such as meat packaging (Rogerson, Shimer, and Wright 2005).

In summary, some processors indicated labor shortages presents challenges. Lack of processing training/education offerings for workers mean that there is more training on the job, which leads to lower productivity and lower wages. This can be tied to relatively high labor turnover. In conjunction with this, the seasonal nature of the meat processing industry exacerbates the demand for labor at certain times of the year. Meat processing training and certification may support increased processing efficiencies and wages thereby, potentially improving profitability of the processing business.

Regulatory Environment

In Michigan, a processor must operate under a Federal USDA Food Safety Inspection System (FSIS) or receive exemption from FSIS inspection. A FSIS retail exemption allows the processor to sell to consumers through the processor's own retail store. In addition, a Food Establishment license is required for any facility where sales to consumers take place. The Michigan Food Law of 2000 establishes several types of Food Establishment licenses depending on how the business operates and the intended customers. For example, a livestock producer who uses a USDA-inspected facility for processing and brings the processed meats to their own farm for direct sales to customers, may operate the farm facility under a food warehouse license, while one that ships the processed meat to their own retail window in town would likely operate the retail facility under a retail grocery store license. Further a retail exempt processor can also sell up to 25 percent of their sales to food service sectors, like restaurants. A custom exempt processor may only slaughter and process livestock for the exclusive use of the owner and may not be resold. Both exemptions require regular inspections and risk-based inspections by USDA and applicable state agencies.

For those Michigan operations that are under federal inspection, there exist concerns about the way in which USDA inspectors operate. First, processors shared that they considered there to be a level of inconsistency across inspectors. While inspectors are largely tied to one facility, processors have noticed through conversations with peers, that the level of detail and infractions identified by inspectors are inconsistent across inspectors. They lay partial blame on the level of training inspectors receive, where one individual quipped that most inspectors are not specialist in the area of meat processing and packaging, but rather are trained along many food processing lines. Others see that a lack of focus on regulations leads to greater inspector discretion with respect to which areas they focus their inspection. In processors' views, many of the citations were for minor issues not readily relevant to food safety, while relevant food safety issues go unreported. This inconsistency may result in unfair advantages or disadvantages for one processor, relative to others. But more so, this is a source of frustration for processors and a source of uncertainty under changes in inspection requirements.

As Michigan does not have state inspection, it seems that regulatory obstacles tend to be driven by federal regulation. Processors appear to look up to the MDARD regulators for guidance, but MDARD regulators are unable to contribute to the federal regulation interpretations. Processors in our study exhibited significant frustration with navigating federal regulations. As opposed to the exempt regulations of Michigan, federal regulations are extremely complex from an operational perspective and largely incomprehensible in text form. That is, what may have started out as a set of regulations that followed a logical flow in prose, has transitioned into a complex system of disjointed mandates that largely appear to be reactive to secondary forces outside the initial objective of the regulation. The complex language underlying federal regulation creates room for interpretation and provides opportunity for two different processors to evoke two different responses to a regulatory question.

Processors generally indicated a warmer relationship with MDARD regulators than federal regulators. More specifically, processors suggested that their relationship with federal regulators was somewhat more confrontational rather than collaborative. This perception may be less about personalities than the

relative systems of regulation, as federal regulations are complex and reactive. USDA regulation is largely bureaucratic, requiring several levels in the chain of command to get final resolutions, while the state system of regulators is largely flatter and more responsive to industry needs. This is not to suggest that personality conflicts cannot be a source of confrontational attitudes, as processors also expressed displeasure at the sometimes rocky relationships they have with their FSIS and MDARD inspectors. But as one MDARD administrator put it; “it requires people, policy and processes to enforce regulation.”

Meat processing regulations are inherently complex. Confusion about regulatory guidelines is perhaps understandable where clear delineations between federal regulations and state regulations are not well defined. With meat processing, confusion is exacerbated with a regulatory environment that is designed to be flexible. Flexible regulation, by definition, requires blurring of regulatory distinctions. That is, the regulatory guidelines are subject to interpretation, and processors feel that such interpretations rests on the regulators’ personal understanding of the regulation. It has also been suggested, that unlike federal USDA beef inspectors, MDARD inspectors do not specialize in the commodities and types of operations they inspect, and that having specialists in meat processing that work specifically with meat processors may improve regulatory consistency and provide preferable regulatory outcomes. This concern seems to largely unfounded when presented to MDARD regulators.

For processors, the regulations can appear cryptic, as what appears a marginal extension of their current operations from the processors’ point of view may actually require a complete shift in regulatory oversight. For example, some retail operations wish to go wholesale. For processors that are regulated under MI exempt status, this would appear to be a marginal shift that can be facilitated with state oversight. However, from a regulatory perspective shifting to any substantive wholesale activity is a quantum leap from exempt retail and the only way to do this is through USDA inspection. The state cannot be the regulator over this seemingly marginal change in activity without fully eclipsing the federal minimal regulatory standards.

Processors report that they may get different opinions from different regulators about very big issues. Small issues are bad enough, but often, what wholesale transactions are permissible for a retail exempt operation is subject to regulatory interpretation. The USDA determines what is permissible under retail exemption and Michigan regulators largely shy away from answering for federal regulators. This is not only to protect Michigan regulators but also to protect Michigan producers from enforcement actions when interpretations of federal regulations are hazy. For state regulators, it is preferable that processors get a direct answer from the federal inspection on matters of federal regulation.

Finally, recent consolidations in Federal FSIS offices have resulted in perceptible changes in the level of service to Michigan processors. Following the closure of the Madison, WI District FSIS office in 2012, processors reported that they have experienced greater frustrations in solving questions and concerns around regulation. In 2012, the USDA closed a third of its fifteen U.S. District FSIS offices. For processors, the closures meant more wait times and greater frustration in addressing regulatory issues. Processors report that they saw this change as increasing the layers of the approval process, rather than streamlining the process. To them, this contrasts significantly with the relatively flat bureaucratic structure of state regulations. Federal regulators, however, point to benefits of this consolidation in that

processors have greater access to consistent responses to inquiries. For them, this consolidation means greater uniformity in regulatory interpretations that reduces uncertainties.

Conclusions

While meat products have not had the same penetration in local food systems as specialty crop products for what may be a variety of reasons, there is increasing interest in expanding the role of meat products in the local food landscape. Livestock producers and meat processors view this as an opportunity for smaller and beginning farmers to remain viable in an ever more competitive market place. From which, value-added attributes over conventional meat products affords price points consumers are willing to pay. Consumers, riding a wave of interest in healthier lifestyles and a renewed interest in social and environmental responsibility, increasingly want to be assured of animal welfare and sustainable livestock practices. They seek product attributes like “grass-finished”, organic and local. Because such attributes command higher prices than convention meat products, they are often deferred for higher end markets. But as local supply chains develop, such prices will become lower, capturing a greater share of consumer expenditures.

However, the paucity of the Michigan’s local food support infrastructure for meat processing may be one of the key limitations to experiencing growth. For livestock processing, building out such infrastructure is by food-safety necessity, hampered by regulation. From a social perspective, regulation makes it possible for consumers to have faith in the quality and safety of the foods we eat, but it also increases the costs of supplying consumer goods. Such costs for meeting regulatory mandates disproportionately impacts smaller, independent processors and the livestock producers that supply them. Larger producers, that cater to mainstream or conventional markets, rely on volume processing in large batches from key suppliers to minimize processing costs. Specialty or niche market foods are centered on product attributes that provide value to consumers. Here, commoditization or standardization with large batch processing contraindicates the value attributes consumers seek.

Michigan has many small, independent meat processors, where their primary business centers on fee-for-service for animal and carcass owners for own consumption. Mostly, they cater to hunters, but processing livestock for owners expands the revenue opportunities for such processors beyond the hunting season. Smaller livestock processors tend to be less competitive than larger processors from a cost perspective, but may find they have greater flexibility in value added markets for products possessing attributes commonly sought by locavores. Such meat products labeled as organic or grass fed command higher consumer prices that may offset the higher processing costs. However, access to slaughter facilities is a challenge for some producers. Livestock producers pursuing retail sales must have access to USDA-inspected slaughter facilities. For many, the transportation and coordination costs of getting livestock to geographically distant slaughter facilities and back is a limiting factor in their pursuit of starting or expanding for consumer markets.

Smaller processors are key resources for a viable system for local meat sales. As large processors are more structured for high-volume production, smaller-scale operations have the incentive and flexibility for meeting local food demands through niche cuts and products. Despite such advantages, the

regulatory environment restricts entry for processors and restricts the value chain from livestock producer to retail markets. For consumers, locally-sourced meats may be most readily accessed through the processors' own retail windows.

Regulatory restrictions appear most intense for producers who want to take their livestock production to retail sales. These producers must locate slaughter and fabrication facilities willing to work with them. As Michigan does not have a state inspection, all intermediate retail sales of Michigan processed meats must go through a federally inspected processing facility. Access to such facilities are limited in some parts of the state. This is most pointed in the Upper Peninsula. Furthermore, because volume processing of livestock is often not the primary catalyst for many of these smaller, independent processors, they often lack sufficient capacity for managing herds at drop-off or storage of processed meats. In this, insufficient refrigerated storage is often mentioned. Limited competition from other processors may result in processor complacency toward livestock producer needs. Such complacency may hold back potential growth, where relatively high startup costs, due partially to regulatory oversight, creates barriers to entry of competing processors. Processors with an eye toward expansion should take into consideration their role in facilitating a much broader supply chain from livestock producer to consumers.

Existing processors must contend with a cadre of regulation from federal regulators and multiple layers of state regulators. Such regulations of meat processing facilities are often designed to be flexible in meeting processors' proprietary needs. However, this flexibility appears to also contribute to processor frustration in understanding regulation and hinder the regulators' ability to regulate consistently. These frustrations appeared to have fomented with the passage of the FDA Model Food Code in 2009, which expanded regulatory oversight of specialty meat processing. MDARD worked with processors in framing implementation in Michigan, but the implementation was not as smooth as anticipated and it led to greater confusion for processors. This investigation largely views grievances in that implementation process as valid, but not extraordinary, given the pervasiveness of the new regulation.

Finally, human capital appears to be an obstacle to processors, with high turnover and large seasonal fluctuations in labor demand. Meat processing is a skill- and physically-intensive endeavor, but given market conditions, commands low wages. Expanding penetration of livestock production through local food channels may reduce the magnitude of seasonal flux to the extent that livestock processing does not overlap with custom exempt processing. Reducing such seasonal flux in labor needs may reduce turnover that often occurs during the slow season. High turnover suppresses wages, as most workers enter this field with limited skills. Reducing turnover will reduce the cost of on-the job training and is expected to increase labor productivity – requiring fewer work-hours to accomplish the same level of output. Higher productivity can also be gained through general training and a certificate-training program. While currently not available in Michigan, several states sponsor meat processing training through vocational education. Having access to such training and a certificate program would have material benefits to both the employer and the employee. Such a program can contribute to state-wide interest in meat processing and through industry-education collaboration, may be a conduit to the exchange of information and best practices across the industry.

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