

**Assessing State and Federal Policies in the US:
CAFOs, Transparency, and Bottlenecks
in Livestock and Dairy Production**

By

Jessica Munoz

Henry Art, Advisor

WILLIAMS COLLEGE
Williamstown, Massachusetts
Summer 2017

Introduction

“Gone are the pastoral scenes in which animals wandered through green fields or flocks of chickens scratched contently for their food. In their place are factory like buildings in which animals live out their wretched existences without ever feeling the earth beneath their feet, without knowing sunlight, or experiencing the simple pleasures of grazing for natural food – indeed, so confined or so intolerably crowded that movement of any kind is scarcely possible.”

Rachel Carson

Foreword of Animal Machines by Ruth Harrison

Rachel Carson depicts the conditions of the nonhuman animals that are being raised for food at a time when animal production began to increase in scale and mechanization. She portrays the growing concern over the quality of life of millions of animals that occurred at that time and even exemplifies the concerns that persist.

Currently, the livestock industry in the United States is most heavily reliant on intensive animal farming practices. This trend toward fewer and larger farms has brought environmental issues, such as air pollution, soil depletion, and waste management, to the forefront of public policy regarding the U.S. livestock industry. There are also public health concerns such as spread of disease and an increasing use of antibiotics and animal welfare concerns as the number of animals per unit of land area increases.

This report begins with a quick discussion of the transformation of livestock and dairy production in the United States and several environmental, animal welfare, and public health concerns. It then provides several federal policies related to livestock and dairy production and specific policies that attempt to address several of the concerns. The paper then addresses legislative state trends and highlights specific policies pending, passed, or failed to pass in the Commonwealth of Massachusetts, State of New York, and State of Vermont. In addition, the report discusses the idea of transparency in farms and slaughterhouses, ag gag laws, the rise of alternative food systems, and bottlenecks of small producers. It then examines current policies,

rulings, and regulations and gives suggestions for changes in public policy to address the rise of CAFOs; concerns of the environment, public health, and animal welfare; ag-gag laws and bottlenecks.

I. Transformation of U.S. Livestock Agriculture and Dairy Production

Livestock and dairy production have undergone a significant transformation in the past few decades. Production has shifted from small, family owned farms to large, industrial ones, namely AFOs and CAFOs.

A. AFOs and CAFOs

An Animal Feeding Operation or AFO is a facility where animals are kept confined and fed for at least 45 days per year and where crops are not sustained over a normal growing period (EPA, 2001). A Concentrated Animal Feeding Operation or CAFO is classified by having over 1,000 “animal units”¹ and the way they discharge waste into the water supply. CAFOs are thus regulated by the National Pollutant Discharge Elimination System or NPDES under the Clean Water Act (See Section II). Livestock production in the United States has become increasingly dominated by CAFOs. As of 2016, 19,496 of the 212,000 AFOs were CAFOs. CAFOs have increased as consolidation and concentration have become more common.

A. Consolidation and Concentration

1. Livestock Industry

Consolidation in the grain industry combined with decades of subsidy payments to producers of commodity grains such as corn and soybeans have indirectly benefited CAFOs in the U.S. They have made it very cheap to buy and deliver an entire trainload of animal feed, below the cost of production, to a single location (Purvis, 1998). This is a result of the US Farm Bill (1996) (see Section II), which dropped commodity 26% below production costs, thereby dramatically reducing feed costs for industrial operations. A Tufts University study discovered

¹ 1,000 animal units= 000 head of beef cattle, 700 dairy cows, 2500 swine weighing more than 55 lbs, 125 thousand broiler chickens, or 82 thousand laying hens
<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/livestock/afo/>

that “factory farms” saved \$34.8 billion between 1997 and 2006 because they could buy feed at below-production costs.² This has allowed operations to become larger and feed animals with grain, instead of letting them graze on pasture. In fact, the total number of livestock units³ on small farms have decreased but the total number in factory farms⁴ have increased from 23.7 million in 2002 to 28.5 million in 2012 (Factory Farm Nation, 2). In particular, the number of operation with cattle herd size of “50 to 99” was 277 in 1997 but has since decreased to 154,098 in 2012. Operations with cattle herd size of “500 or more”, however, have increased. It rose from 275,080 in 1997 to 671, 441 operations in 2012 (see Appendix J).

In addition, systems of vertical integration along the value chain, from breeder to grower to processor/packer, with control usually held at the processor level have been created. Vertical integration means that processors typically do not purchase their meat inputs through markets. Rather, most production is now organized by integrators who coordinate production among growers specializing in single stages of production using production contracts (Martinez, 2002). Some large farms produce only a single commodity, such as dairy farms that produce only milk or hog birthing operations that produce only nursery pigs.

Today’s livestock farms are increasingly reliant on contracts and other agreements to govern the links between production stages. Traditionally, farmers relied on cash markets as the primary mechanism for organizing production. They borrowed money for input expenses from lenders, raised their livestock to market weight, and sold livestock and livestock products to processors for a price

² For more info read: Starmer, E., and T.A. Wise. Global Development and Environment Institute of Tufts University. “Feeding at the Trough: Industrial Livestock Firms Saved \$35 Billion from Low Feed Prices.” GDAE Policy Brief No. 07-03. December 2007.

³ Livestock units is a way of measuring different kinds of animals based on their weight (e.g. one beef cattle is equivalent to two-thirds of a dairy cow, eight hogs, or four hundred chickens).

⁴ “Factory farms” are defined as having more than 500 beef cattle (feedlots only), 1,000 hogs, 500 dairy cows, 100,000 egg-laying chickens and 500,000 broiler chickens (sold annually), the largest size categories that the USDA recognizes in its survey (Read www.foodandwaterwatch.org/sites/default/files/factory-farm-nation-report-may-2015.pdf for more information)

determined at the time of sale. More formal and long-term contractual relationships now cover over half of all livestock production (MacDonald). Specifically, in the broiler industry there are integrators who own hatcheries, processing plants, and feed mills. Integrators then contract with farmers to “grow out” broiler chicks to market weight, and to produce replacement breeder hens for hatcheries. Under a production contract, the integrator provides the farmer/grower with chicks, feed, and veterinary and transportation services, while the farmer provides labor, capital in the form of housing and equipment, and utilities. The birds are sent to slaughter after 5-9 weeks on the farm, and the farmer is paid for the growing services provided (MacDonald).

As farm production shifted to larger operations and tighter vertical linkages, the livestock processing industries became much more concentrated. Most producers now face just a few buyers for their livestock, livestock products, or grower services. Mergers among processors and increases in plant size which have allowed processing plants to realize scale economies and lower costs have played a role in increased concentration (MacDonald). Today, just four companies control 63 percent of pork slaughter (Tyson, Swift, Cargill, and Smithfield), 82 percent of cattle slaughter (Tyson, JBS, Cargill, and National Beef), and 53 percent of chicken slaughter (Tyson, Pilgrim’s, Perdue, and Sanderson).⁵

2. Dairy Industry

Increased dairy cow output and advances in dairy farm technology and management have led to a sharp reduction in the number of dairy farms. Between 1997 and 2007, about 5,000 dairy farms disappeared every year.⁶ Even with the loss of 52,000 farms, milk production has

⁵ See “Connect Four: The Percentage of Sales Controlled by Top Firms in Food Processing Sectors” <https://msu.edu/~howardp/connectfour.pdf>

⁶ USDA NASS. Agricultural Statistics Database. Accessed August 5, 2008. <http://www.nass.usda.gov/QuickStats>.

remained constant because the remaining farms have added more cows.⁷ In regards to dairy production, the number of dairy cows on factory farms has risen from 2.5 million cows to 5.6 million, and the average size of dairy factory farms has grown by 49.1%, between 1997 and 2012 (Factory Farm Nation, 3). In 1997, there were 22,275 operations with “50-99” cows per herd which is considered relatively small, but in 2012 there were only 111,547. Those with large herd sizes, however, have increased. In 1997, there were 30,160 heads of “1,000 or more” cows per herd and in 2012 it grew to 169,828 (see Appendix J). More than a quarter of all milk now comes from these industrial dairies.⁸

Most dairy farmers market their milk through cooperatives. These cooperatives allow producers to pool the milk from many farms and participate in federal programs that set milk prices. Consolidation, however, in the milk-processing industry has left the remaining dairy farmers with fewer options to market their milk as cooperatives merged to take advantage of economic gains from more centralized management of milk supplies and disposition. The market share of the four largest fluid milk manufacturers doubled in five years, rising from 21 percent in 1997 to 43 percent in 2002.⁹ More specifically, in 1980, there were 435 dairy cooperatives that marketed 77 percent of fluid milk but by 2002, there were only 196 cooperatives but they marketed 86 percent of milk.¹⁰ As of today, Dairy Farmers of America or DFA, a marketing cooperative, markets over a third of all US milk. It is the primary supplier to the processor

⁷ MacDonald, James M. and William D. McBride. USDA ERS. “The Transformation of U.S. Livestock Agriculture: Scale, Efficiency, and Risks.” EIB-43. January 2009.

⁸ USDA NASS. Agricultural Statistics Database

⁹ Martinez, Steve W. USDA Economic Research Service. “The U.S. Food Marketing System: Recent Developments 1997-2006.” Economic Research Report Number 42. May 2007 at 24.

¹⁰ USDA. “Economic Effects of U.S. Dairy Policy and Alternative Approaches to Milk Pricing” Report to Congress. July 2004 at 21.

company Dean Foods¹¹, whose market controls 36 percent of the nation's fluid milk supply (Bunge).

This consolidation and concentration in the livestock and dairy production has led to a decrease in farms (see Appendix A) and a rise in AFOs and CAFOs (see Appendix B for photos). In these industries, there have been changes in the production in livestock and dairy as advancements have arisen.

C. Advancements

Larger and faster equipment has allowed a single producer to house and feed more livestock, or to milk more cows in a single day. New technologies have also created scale economies, which reduce costs more for larger operations. Thus, larger farms have realized higher profits, on average, which provides a strong incentive for operators to grow larger. In turn, lower industrywide farm costs have led to lower prices for farm commodities and in turn to lower retail food prices. Lower prices can squeeze smaller farms with higher costs, causing many to exit, to grow, or to explore niche markets for differentiated products (MacDonald, 23).

Moreover, animals are bred to gain weight, produce milk efficiently, or yield specific characteristics; and are fed with specialized feed. Improvements in animal breeding, technological advancements, and formulate feeds has led to an increase in productivity and efficiency. More specially, it now takes less time to raise a fully-grown animal. For instance, in 1920, a chicken took approximately 16 weeks to reach 2.2 lbs., whereas now they can reach 5 lbs. in 7 weeks (Pew).

In regards to the swine industry, it has changed from a pasture-based system, with one to two farrows per sow per year to a large-scale confinement operation (MacDonald, 10). Farms

¹¹ Dean Foods Co. 10-Q SEC Filing. 2002

that have more than 5,000 sow produced 92% of the pig crop in 2003 (NASS). Moreover, beef cattle are now born and weaned on a ranch on pasture, where they stay for six months, and then are finished in feedlots (MacDonald, 13).

In addition, the poultry industry has seen a drastic transformation as key scientific and technical developments arose in the late 19th and early 20th century. Understanding of poultry nutritional requirements improved and methods for synthesizing critical dietary ingredients that allowed formulation of a nutritionally adequate diet without the need for the birds to forage on pasture was discovered. In particular, it was discovered that Vitamin D-3 could be added to the diet so that the birds no longer needed to be exposed to sunlight to synthesize it. This enabled production to be moved indoors and into cages and allowed closer control over environmental conditions, particularly lighting. The ability to control lighting removed the seasonal limitations on the poultry business (Potts 141, 145). Research on antibiotics and selective breeding also transformed the poultry industry as it made it quicker for a chicken to grow to its full size (Potts 144, 149).

Moreover, milk production per cow has also increased dramatically, from approximately 5,000 lbs (2,268 kg) per cow in 1950 to almost 19,000 lbs (8,618 kg) per cow now. This increase was achieved through numerous technological and scientific developments. One of the most important was the development of artificial insemination techniques, which facilitated genetic selection for production characteristics (Mench).

D. Effects of Transformation:

This transformation in livestock and dairy production, however, has also generated environmental, animal welfare, and public health concerns as industrialization have concentrated animals and animal wastes in localized areas.

1. Environmental: The amount of manure CAFOs produce is a growing concern. When manure is applied too frequently or in too large a quantity to an area, nutrients overwhelm the absorptive capacity of the soil and can run off or leach into the groundwater. Groundwater contamination can also affect surface water (Spellman & Whiting). Contamination in surface water, such as of ammonia, can cause nitrates and nutrients such as nitrogen and phosphorus to build up. This excess in nutrient concentrations can then lead to eutrophication, which causes oxygen depletion and makes the water inhabitable to fish or indigenous aquatic life (EPA, 1998).

Emissions from degrading manure also produce air pollutants such as ammonia, hydrogen sulfide, methane, and particulate matter that affect air quality in surrounding communities. More specifically, livestock operations are responsible for over 7% of the greenhouse gas emissions in the U.S. (Massey & Ulmer, 2008) as methane, a greenhouse gas, is emitted from manure. Methane, which is 25 times more potent than carbon dioxide, contributes to climate change (IPCC 2007).

CAFOs also raise environmental justice concerns. One study discovered that there were 7.2 times more hog CAFOs in areas with higher poverty levels compared to those with lower levels. Hog CAFOs were also five times more common in areas with greater percentage of nonwhite residents than in areas with lower percentages (Mirabelli). This has created an unequal distribution of public health risks.

2. Public Health: CAFOs emit particulate matter and suspended dust, which is linked to asthma and bronchitis (Sigurdarson & Kline, 2006). Long exposure to particulate matter can lead to decreased lung function (Michigan Department of Environmental Quality [MDEQ] Toxics Steering Group [TSG], 2006). Workers in these places develop health and physical problems over time due to exposure to diseases and to the monotony of industrial practice. The tedious

routine at the factory also allows for an increase of desensitization to the chicken's suffering (Potts 169). Farm workers also have a higher risk in developing respiratory diseases.

Occupational asthma and bronchitis can be as high as 30% in factory farm workers (Horrigan, Lawrence, & Walker, 2002).

In addition, manure is a major source of pathogens. Pathogens, such as *E. coli* and *Salmonella*, can cause disease or infection in humans. In recent years, there have been an increase in food safety recalls. In 2016 there were 122 recalls with 58,140,787 pounds recalled.¹² Most alarmingly, a staggering 47,398,141 pounds of the product recalled in 2016 was because of contamination with listeria monocytogenes¹³ by far the deadliest pathogen that USDA keeps recall records on. Moreover, as antibiotics are being more commonly administered in animal feed, there is a growing concern that there will be an increase in antibiotic-resistant microbes and that certain antibiotics will no longer be useful in treating humans (Kaufman, 2000).

3. Animal Welfare: As confinement of livestock and poultry have increased, issues of animal welfare have risen. The three environments considered to be most behaviorally restrictive in farms are conventional cages for laying hens, gestation stalls for sows, and tie stalls for dairy cows. Behavior can be restricted either because the animals are crowded or because physical or social resources (e.g. social partners, rooting material) are absent. This can cause physical problems (e.g. poor bone strength) and develop abnormal behavior (e.g. pecking, tail biting)

In addition, there are concerns in slaughter plants. According to Temple Grandin, one of the top scientists in the humane livestock handling industry there are five basic causes¹⁴:

¹² United States Department of Agriculture, Food Safety Inspection Service. Recall Summaries 2016. Posted at <https://www.fsis.usda.gov/wps/portal/fsis/topics/recalls-and-public-health-alerts/recall-summaries/recall-summaries-2016>

¹³ Ibid.

¹⁴ <http://www.grandin.com/references/abstract-14.html>

1. Stressful equipment and methods
2. Distractions that impede animal movement
3. Lack of employee training
4. Poor equipment maintenance
5. Poor condition of the animals arriving at the plant

Stressful transport practices as well as inappropriate layout and design of facilities can cause injury, inefficient handling of animals, lower meat quality, and even mortality (Grandin, 2007).

In addition, farm animals are not protected under the Animal Welfare Act, and poultry are currently not protected under the 28 Hour Law and the Humane Slaughter Act (see Section II) which can lead to issues when handling these animals. For instance, in the U.S., approximately 0.5% of broiler chickens have died annually during the process of being transported to the processing plant (Wabeck, 2002).

II. Federal Policies Relating to Livestock and Dairy Production

There are several policies that currently comprise the federal legal structure underlying livestock, poultry, and dairy production. Some are regulations in the meat production process while others are to keep the economy stable or in response to animal welfare, public health, and environmental concerns while others. The United States Department of Agriculture (USDA), the agencies that compose the USDA such as the Food Safety and Inspection Service (FSIS), State inspection programs, the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services, and the United States Environmental Protection Agency (EPA) oversees and enforces many of these policies regarding animal waste, animal health, food safety, environmental concerns, and other related aspects. More specifically, the USDA is the federal executive department responsible for developing and executing federal laws related to farming, agriculture, forestry, and food. The USDA promotes sustainable agriculture production, safeguards the health and productivity of forests and working lands, supports rural communities, and ensures food safety.¹⁵ It was formed in 1862 under President Abraham Lincoln.¹⁶ The current Secretary of Agriculture is Sonny Perdue¹⁷. Below are selected federal acts, laws, and regulations.

A. Twenty-Eight Hour Law¹⁸

The Twenty-Eight Hour Law (49 U.S.C, Section 80502) was originally passed in 1873 to regulate the length of time animals can be transported from state to state. Animals raised for food cannot be transported for more than twenty-eight consecutive hours without being unloaded for

¹⁵ <https://www.usda.gov/our-agency/about-usda>

¹⁶ <https://www.fsis.usda.gov/wps/portal/informational/aboutfsis/history>

¹⁷ <https://www.usda.gov/our-agency/about-usda/our-secretary>

¹⁸ For more information read: <https://www.gpo.gov/fdsys/pkg/USCODE-2011-title49/pdf/USCODE-2011-title49-subtitleX-chap805-sec80502.pdf>

five hours for rest, water, and food. This was a step forward in developing humane standards. The law, however, excludes chickens in its protection and is poorly enforced.

B. Humane Methods of Slaughter Act (HMSA) ¹⁹

The federal Humane Methods of Slaughter Act (P.L. 85-765; 7 U.S.C. 1901-1906) was created on August 27, 1958 requiring humane methods of slaughtering and handling livestock to be used. The USDA's Food Safety and Inspection Service (FSIS) are responsible for overseeing compliance of the act. Livestock animals, such as cattle, must be rendered insensible to pain before being handled and slaughtered. This act also does not apply to poultry, and therefore, does not require the humane handling and slaughtering of domestic birds. Congress intended to exclude poultry from the definition of livestock when it enacted the bill that became this Act (Levine v. Vilsack). This was exemplified in 1994 when Karen Davis, the President of the United Poultry Concerns, went on a hearing before the Subcommittee on Livestock of the Committee on Agriculture to push for recommendations for humane methods of poultry stunning to be added to the Act, but was not approved (The Downed Animal Protection Act). Congressman and Chairman of the committee, Harold Volkmer, stated his opposition to the bill at the beginning of the hearing, and described him killing chickens while growing up on a farm and how he saw nothing wrong about it. Karen Davis, however, argued that the method of slaughtering poultry Volkmer described was not the method that is employed in 95 percent or more of the commercial poultry slaughter plants in the United States. Since there is no explicit law protecting poultry, chickens suffer as they are being raised and as they are being killed. Despite the arguments presented by several organizations to include poultry in the Act, the bill was not passed. The USDA even issued a Federal Register Notice entitled "Treatment of Live Poultry before Slaughter" to make it clear that

¹⁹ For more info read <https://www.gpo.gov/fdsys/pkg/USCODE-2015-title7/pdf/USCODE-2015-title7-chap48.pdf>

the Act does not require the humane handling and slaughtering of poultry (70 Federal Register 56624).

C. Animal Welfare Act (AWA) ²⁰

The Animal Welfare Act (P.L. 89-544; 7 U.S.C. Section 2131) was signed into law on August 24, 1966. Overseen by the USDA's Animal and Plant Health Inspection Service, the act regulates the treatment of animals in research and exhibition. This federal act excludes farm animals from its protection, including chickens which account for more than 90 percent of the animals slaughtered for food (Potts 167).

D. Federal Meat Inspection Act (FMIA) ²¹

The USDA's Food Safety and Inspection Service (FSIS) inspects slaughter facilities, animals before slaughter, and meat products. This act was enacted in 1906 under President Theodore Roosevelt, primarily in response to Upton Sinclair's *The Jungle*, an expose of the Chicago meat packing industry. This legislation did not originally cover poultry, as at that time poultry was a dinner specialty and purchased live or as New York-dressed poultry (Potts 146). All meat and poultry produced for retail in the United States must come from animals that are slaughtered and processed under continuous inspection, meaning that every animal is inspected before and after slaughter. Meat under federal inspection (by a USDA inspector) can be sold interstate. Meat can also be inspected under a state facility operating under Hazard Analysis Critical Control Points or HACCP regulation²², but is limited to intrastate commerce (see F). Below are exemptions to federal inspection²³:

²⁰ <https://www.gpo.gov/fdsys/pkg/USCODE-2015-title7/html/USCODE-2015-title7-chap54.htm>

²¹ For more info read <https://www.gpo.gov/fdsys/pkg/USCODE-2014-title21/pdf/USCODE-2014-title21-chap12.pdf>

²² FSIS regulations and policies for the Federal Meat and Poultry Products Inspection Acts are available at: http://www.fsis.usda.gov/regulations_and_policies/regulations_directives_and_notices/index.asp.

²³ For a flowchart to determine what type of inspection is needed refer to Appendix G

Personal/Individual Use Exemption (FMIA 9 CFR 303.1 (a)(1): A person may slaughter/prepare livestock of his own raising without continuous federal inspection for the exclusive use by him, his family members, and his non-paying guests.

Custom Exemption (FMIA 9 CFR 303.1 (a)(2)): An establishment may slaughter and prepare livestock belonging to someone else for the exclusive use of that person. Farmers and facilities must comply with federal sanitation requirements, mark products “not for sale” and keep custom products apart from products for sale.

E. Poultry Products Inspection Act (PPIA)²⁴

Enacted in 1957, this act requires that the USDA’s FSIS inspects all poultry slaughtered, and processed. The enactment of PPIA was not a response to perceived defects in the inspection system but, rather, a reaction to changes in consumer perception and marketing patterns. During World War II poultry inspection activities increased consumer awareness of inspection, which in turn led to an increase in sales of poultry products bearing the FPIS certification mark. This then stimulated further interest in a broader federal inspection program. In addition, the substantial growth in the poultry industry during and immediately after World War II had transformed it from one with primarily local markets to one with nationwide markets that could be effectively served only by uniform national inspection procedures and standards (USDA, 1984). The per capita consumption of poultry has increased from 34.3 pounds in 1960 to 107.6 pounds in 2016.²⁵ Below are exemptions to federal inspection:

²⁴ <https://www.gpo.gov/fdsys/pkg/USCODE-2014-title21/pdf/USCODE-2014-title21-chap10.pdf>

²⁵ <http://www.nationalchickencouncil.org/about-the-industry/statistics/per-capita-consumption-of-poultry-and-livestock-1965-to-estimated-2012-in-pounds/>

Personal/Individual Use Exemption (9 CFR 381.10 (a)(3)): A person may slaughter/prepare livestock of his own raising without inspection for the exclusive use by him, his family members, and his non-paying guests.

Custom Exemption (9 CFR 381.10 (a)(4) & (d)): An establishment may slaughter and prepare livestock belonging to someone else for the exclusive use of that person.

Producer/Grower (9 CFR 381.10(c)): A person may slaughter and process without federal inspection if the grower slaughters no more than 1,000 healthy birds in a calendar year.

Other exemptions include Producer/Grower 20,000 Limit Exemption (9 CFR 381.10 (a)(5)), Small Enterprise Exemption (9 CFR 381.10(a)(7) & (b)) and Retail Exemption (9 CFR 381.10(a)(1)). <https://www.fsis.usda.gov/wps/wcm/connect/e6658a9c-915f-4283-beaf-a827b35e906a/Fed-Food-Inspect-Requirements.pdf?MOD=AJPERES>

F. Wholesome Meat Act (WMA)²⁶ and Wholesome Poultry Products Act (WPPA)²⁷

WMA (H.R. 12144) was enacted in 1967 under President Lyndon Johnson amending the FMIA. It required that states have inspection programs “equal to” that of the federal government. WPPA, enacted in 1968, amended PPIA requiring that all poultry sold to consumers must be inspected in a state program “equal to” that of the federal inspection program. Previously, 16% of the chickens processed in the United States were not inspected by USDA because they were not transported across states lines and 31 states had no program of their own to cover the inspection of such poultry (USDA, 1984).

G. Packers and Stockyards Act²⁸ and Farmer Fair Practices Rule²⁹

²⁶ https://aglearn.usda.gov/customcontent/FSIS-6005/documents/Meat_Inspection_Act.pdf

²⁷ <https://www.law.cornell.edu/cfr/text/9/381.1>

²⁸ https://www.gipsa.usda.gov/laws/law/PS_act.pdf

²⁹ <https://www.usda.gov/media/press-releases/2016/12/14/usda-announces-farmer-fair-practices-rules-clarifications-industry>

The act (7 USC 181-229b), enacted in 1921, was passed “to assure fair competition and fair trade practices, to safeguard farmers and ranchers...to protect consumers...and to protect members of the livestock, meat, and poultry industries from unfair, deceptive, unjustly discriminatory and monopolistic practices...” This act set up the Grain Inspection and Packers and Stockyards Administration (GIPSA).

The Farmer Fair Practices Rules target the most harmful practices hurting farmers and clearly outlines protections to restore fairness. In part due to the concentration in farms, growers often have limited options for processors available in their local communities to contract with. That means all too often, processors and packers wield the power and growers are vulnerable to market risks and concentration in the processor market.

H. Agriculture Act (Farm Bill) of 1996³⁰ and 2014³¹

The farm bill was first created during the Great Depression under President Franklin D. Roosevelt to give financial assistance to farmers who were struggling due to an excess crop supply and to ensure there was an adequate food supply. It provides disaster assistance to livestock producers under three programs: Livestock Indemnity Program, Livestock Forage Program, and Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish. The 1996 Farm Bill (as mentioned in Section D) or also known as the Freedom to Farm Act, ended the structural safety nets that had protected farmers. The Farm Bill eliminated the requirement to keep some land idle, which encouraged farmers to plant as much as they could. It also eliminated the grain reserves that were meant to stabilize supplies and prices. The bill’s proponents suggested that farmers would adjust to market conditions and that the market would replace any federal payments. This deregulation, however, left farmers vulnerable to market fluctuations. Farmers planted more. This

³⁰ Foodandwater.org Farm Bill 101

³¹ https://www.fsa.usda.gov/Internet/FSA_File/2014_farm_bill_customers.pdf

influx in grain onto the market caused the price of grains to collapse. Farmers planted more to make up for lost income, which then depressed prices further. Between 1996 and 1997, real corn prices dropped by 28.4 %. Dramatically falling prices led to direct government payments to farmers to cover their losses. Low prices allowed meatpackers, factory farms, and food processors to buy cheap crops. The 2014 Farm Bill (H.R. 2642; Pub. L. 113–79) provides reform and continuation of agricultural programs for 2014 to 2018. It expands subsidies for crop insurance.

I. Grade A Pasteurized Milk Ordinance (PMO)³²

Per US Federal Regulation (21 CFR § 1240.61) established by the FDA in 1924, all milk sold or distributed across state lines must be pasteurized. States may adopt their own laws regarding raw milk sales.

J. Agricultural Marketing Agreement Act³³

This act, enacted in 1929, authorizes Federal Milk Marketing Orders (FMMOs) that establish certain provisions under which dairy processors purchase fresh milk from dairy farmers. This assures dairy farmers a reasonable minimum price for their milk throughout the year and helps prevent dramatic fluctuations in price through periods of heavy and light milk production.

K. National Pollutant Discharge Elimination Program (NPDES)³⁴

The EPA introduced the NPDES, which is part of the Clean Water Act, to regulate CAFOs and attempt to respond to the environmental problems posed by livestock operations. As a result of *Water Keeper et al. vs the EPA* in 2003, CAFOs which discharge or propose to discharge waste are required to apply for permits and create a nutrient management plan that bases nutrient

³² fda.gov/downloads/food/guidanceregulation/guidancedocumentsregulatoryinformation/milk/ucm513508.pdf

³³ <http://legisworks.org/congress/75/publaw-137.pdf>

³⁴ <https://www.epa.gov/npdes>

applications on agronomic rates, a provision that requires many CAFOs to spread their manure over a much larger land base than they are currently using.

L. Environmental Quality Incentives Program³⁵

The Environmental Quality Incentives Program or EQUIP is a voluntary program that aids livestock producers to adopt conservation and environmental measures aimed at protecting soil and water resources.

M. Other Federal Policies and Programs

The Egg Products Inspection Act of 1970 regulates the sale of eggs and egg products; The Food Purchases program allows the USDA's Agricultural Marketing Service (AMS) to purchase meats, poultry, fish, and egg products for domestic feeding programs to stabilize prices. Other programs include Insurance for Cattle, Swine, and Lamb that protects against declining livestock prices or shrinking gross margins; USDA's Disease Eradication; Animal Health Surveillance System; and Emergency Management Response System.

³⁵ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/equip/>

III. Legislative State Trends Relating to Livestock/Dairy Production

In addition to federal regulation, states have enacted their own independent legislation regarding farms, public health and animal welfare concerns. Some legislative trends include:

Ballot Initiatives introduced by animal rights organizations to challenge production systems. This includes Question 3 in Massachusetts (see Section IV) as well as Proposition 2 in California which took effect on January 1, 2015.³⁶

Farm Protection Legislation or Ag-Gag Laws (see Section V)

Antibiotic Legislation: Some states have introduced bills that would restrict when farmers and veterinarians can administer antibiotics to food-producing animals.³⁷

Right to Farm Amendments: Every state has a Right to Farm law protecting farmers and ranchers who use accepted and standard farming practices from nuisance lawsuits.³⁸

Livestock Care Standards Advisory Boards: States have adopted bills relating to farm animal welfare to establish standards for livestock and poultry care/well-being.³⁹

IV. Specific State Policies

A. Commonwealth of Massachusetts

1. HB 441 (Pending- 1/23/2017): A Livestock Care and Standards Board is to be established to ensure the humane treatment of livestock⁴⁰

2. Question 3 Ballot (Passed 11/8/2016 with 77% approval): Voters approved the Question 3 measure this past election that prohibits Massachusetts farmers from confining egg-laying hens, pigs, and calves and bans the sale of products from animals confined in that manner

³⁶ For more information, go to <http://cagefreeca.com/>

³⁷ Read “States are Taking Charge of Antibiotic Use in Animals” <https://www.law360.com/articles/723687>

³⁸ <http://www.animalagalliance.org/connect/#legislation#>

³⁹ See 26

⁴⁰ <https://legiscan.com/MA/bill/H441/2017>

from any state (Buell). This prevents chickens from living in crowded conditions and enables them to engage in normal behaviors. Farms and businesses can only produce and sell eggs from cage-free hens and pork from pigs not raised or born of a sow raised in conventional housing ⁴¹

The farm that it will affect the most is Diemand Farm, which currently houses 3,000 birds in cages. The owners, however, believe that their practices are humane, that caging hens keep them safe from predators and helps contain disease, and that the Question 3 bill is not needed in Massachusetts.⁴²

- Prior to this there was SB 2232/786: Gestating sow, veal calf, or egg-laying hen cannot be confined in an enclosure that prevents the animal from lying down and moving around freely---These bills were not passed in 1/24/2011 and 6/30/2014
- Opinions from local farmers: Topher Sabot from Cricket Creek Farm supported the bill but believes that the bill will not have a huge impact on Massachusetts as very few farms use inhumane practices. He also states that a health inspector or animal control officer- as they tend to be the ones overseeing or enforcing farm regulations- should not be overseeing the bill as they have no experience in livestock or farming practices. Similar bills should be passed in states where inhumane practices are more prevalent. Kim Wells from East Mountain Farm, however, did not support Question 3. He believes that it is not going to do anything, and it will hurt farmers who might be using cages but do not have inhumane practices.

3. Custom/on-farm slaughter allowed (See Appendix F)

4. 1,000 and 20,000 bird exemption allowed (see Appendix F)

⁴¹ <http://www.wbur.org/politicker/2016/11/08/question-three-animal-confinement-results>

⁴² <https://patch.com/massachusetts/beaconhill/question-3-last-chicken-farm-standing>

5. Only Farm Sales of Raw Milk Legal (See Appendix F)

6. Bill H.755: An Act to strengthen the Massachusetts agricultural infrastructure relative to meat and poultry production and processing.” (Pending since 2015): State and USDA regulations require both custom and commercial slaughter/processing to be conducted in an approved facility. Since Massachusetts does not have a state inspection program any producer wishing to sell meat products to consumers must have their animals processed in an USDA inspected facility, or sell the live animal to the consumer and facilitate the custom processing (inspected by the Department of Public Health). This bill is intended to create a state inspection program to help producers (Bill H.755)

B. State of New York

1. AB 849 (Pending- 1/9/2017): Poultry products treated with antibiotics containing arsenic are required to bear a label indicating it⁴³

2. AB 1725 (Failed- 2011): Downed animals are to be humanely treated and removed⁴⁴

3. AB 8597/2118/3612 (Failed- 5/29/2009, 1/13/2011 and 1/28/2013): Farm animals cannot be confined for all the majority of any day in an enclosure that prevents the animal from lying down and moving freely.⁴⁵

4. SB 5172 (Failed 5/3/2011): Unauthorized feeding, release, or photography/video of a farm animal or farm is prohibited (ag-gag law did not pass in NY)⁴⁶

5. Custom/on-farm slaughter allowed (See Appendix F)

6. No State Meat and Poultry Inspection (MPI) program⁴⁷

⁴³ <http://www.animalagalliance.org/connect/#legislation#>

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ <https://www.fsis.usda.gov/wps/portal/fsis/topics/inspection/state-inspection-programs/state-inspection-and-cooperative-agreements/states-without-state-mpi-programs/states-without-state-mpi-programs>

7. 1,000 and 20,000 bird exemption allowed (see Appendix F)

8. Only Farm Sales of Raw Milk Legal (See Appendix F)

9. S.7345 / A.10170 (7/21/2016): New live animal slaughter markets within 1,500 feet of a residential dwelling in NYC is prohibited. “City-based live slaughter markets are notorious for exposing animals to filthy, cruel and inhumane conditions,” said Brian Shapiro, New York state director for the HSUS.⁴⁸

C. State of Vermont

1. S 295 (Passed 5/12/2012): A Livestock Care Standards Advisory Council is established to evaluate state laws regarding the care, handling, and well-being of livestock⁴⁹

2. S 239 and H 438/374 (Failed 1/13/2012, 3/1/2013, and 3/10/2015): A gestating cow cannot be confined in an enclosure that prevents it from lying down and moving freely.⁵⁰

3. S 230 (Failed 1/5/2010): A representative from the Humane Society must be present when livestock are slaughter and must report violations to the Secretary.⁵¹

4. S 162 (Failed- Proposed 3/2013): which specifies a fine of up to \$1,000 for anyone who "makes a knowingly false statement or representation as part of an application to be employed at an agricultural facility."⁵²

5. State Meat and Poultry Inspection (MPI) program⁵³

6. Custom/on-farm slaughter (See Appendix F)

⁴⁸ http://www.humanesociety.org/news/press_releases/2016/06/ny-live-animal-slaughter-markets-062016.html?referrer=https://www.google.com.mx/

⁴⁹ <http://www.animalagalliance.org/connect/#legislation#>

⁵⁰ Ibid

⁵¹ Ibid

⁵² <http://www.leg.state.vt.us/docs/2014/bills/Intro/S-162.pdf>

⁵³ <https://www.fsis.usda.gov/wps/portal/fsis/topics/inspection/state-inspection-programs/state-inspection-and-cooperative-agreements/states-operating-their-own-mpi-programs/states-operating-their-own-mpi-programs>

7. Only 1,000 bird exemption (See Appendix F) but as of July 2017, there is also a 5,000 and 20,000 exemption (Act 53) ⁵⁴

8. Only Farm Sales of Raw Milk Legal (See Appendix F)

9. 6 V.S.A 3131-3134 (1968): The law requires the humane slaughter of all commercial livestock with a "humane method" defined as a method whereby the animal is rendered insensible to pain by mechanical, electrical, chemical or other means that is rapid and effective before being shackled, hoisted, thrown, cast or cut (with exemptions for religious ritual slaughter). ⁵⁵ Vermont is currently the only state that requires all federal and state commercial meat and poultry slaughter facilities to have a written plan on how they intend to comply with federal and state humane handling laws. ⁵⁶

⁵⁴ <http://legislature.vermont.gov/assets/Documents/2018/Docs/ACTS/ACT052/ACT052%20As%20Enacted.pdf>

⁵⁵ http://agriculture.vermont.gov/sites/ag/files/pdf/meat_poultry_inspections/6%20VSA%20Chapter%20201.pdf

⁵⁶ http://agriculture.vermont.gov/food_safety_consumer_protection/meat_poultry_inspections/humane_handling

V. Undercover Investigations, Transparency and Ag Gag Laws

A. Initial Uproar

Livestock/dairy production and slaughtering practices have been unknown or difficult to publicly access. In 1904, Upton Sinclair applied for work as a meatpacker at slaughterhouses in Chicago. Inside the slaughterhouses, he documented spoiled meat turned into sausage, dead rats mixed into the meat, and pigs cannibalizing one another.⁵⁷ Sinclair published these revelations in *The Jungle*, which sparked uproar over conditions in the meatpacking industry and caused Congress to enact the Federal Meat Inspection Act of 1906 (see Section III).⁵⁸

B. Undercover Investigations and Ag-Gag Laws

The followed century was filled with undercover investigations to expose many acts of abuse and shoddy practices. In response to concerns of trespassing and taking pictures in animal/agricultural facilities without the consent of the owner, the first Ag gag law was put into place in 1990 when Kansas enacted the Farm Animal and Field Crop and Research Facilities Protection Act (Landfried, 391). Montana⁵⁹ and North Dakota⁶⁰ followed suit. For nearly two decades no new ag-gag legislation was introduced.

That changed, however, after a series of high profile undercover investigations were made public in the mid to late 2000s (Shea). For instance, in 2007, an undercover investigator at the Westland/Hallmark Meat Company in California filmed workers forcing sick cows, many unable to walk, into the “kill box” by repeatedly shocking them with electric prods, jabbing them in the eye, prodding them with a forklift, and spraying water up their noses (Wald).

⁵⁷ See Upton Sinclair, *The Jungle*, 127, 128, 271

⁵⁸ See *National Meat Ass'n v. Harris*, 132 S.Ct. 965, 968 (2012) (attributing a national uproar over the meatpacking industry and subsequent passage of the Federal Meat Inspection Act to Upton Sinclair's reporting); 21 U.S.C. § 601 et seq. (Federal Meat Inspection Act)

⁵⁹ Mont. Code Ann. § 81-30-103 (2011)

⁶⁰ N.D. Cent. Code Ann. §§ 12.1-21.1-01 (2011)

The publication of undercover videos had devastating consequences for the agricultural facilities involved. The videos led to boycotts of facilities by McDonald, led to bankruptcy and closure of facilities and criminal charges against employees and owners, and led to statewide ballot initiatives banning certain farming practices (Bollard). They also led to the largest meat recall in United States history, a facility's entire two years' worth of production (Brown).

In 2004, the American Legislative Exchange Council drafted The Animal and Ecological Terrorism Act⁶¹ proposed prohibiting activists from "entering an animal or research facility to take pictures by photograph, video camera, or other means with the intent to commit criminal activities or defame the facility or its owner." It also proposed the creation of a "terrorist registry" that would contain the names, addresses and photographs of those convicted under the proposed law. This bill has been used as a template for current ag-gag laws in response to these undercover investigations.

C. Transparency and Status

Under so called ag-gag laws, taking photos or videos on farms and slaughterhouses could be illegal (Richey). There are ongoing debates between industries and animal rights activists who want to make these practices easily visible to consumers. They are relying on this idea of politics of sight, which according to Pachirat, is the organized attempts to make visible what is hidden and to breach zones of confinement to bring about social and political transformation (236). These hidden cameras, however, provide our only view onto the meatpacking industry. Mike Wolf insists that "meatpackers are the ones who have created the necessity for undercover investigations by blocking consumers from seeing how their food is made. With the government working hand in hand with business, the only remaining window into the food system is the lens

⁶¹ <https://www.alec.org/model-policy/the-animal-and-ecological-terrorism-act-aeta/>

of an activist's camera" (Genoways). A concern of these undercover investigations done by activists is that the video might be edited down to short clips or narrated to distort what is happening at these places. Currently, there are seven states that have ag-gag laws (see Appendix C). Until recently, federal trial courts have struck down ag-gag laws in Idaho and Utah as unconstitutional as it is a violation of the First Amendment (Chappel).

VI. Rise of Alternative Food Systems

Alternative food production methods first began appearing in the 1970s as discontent with commercial agriculture increased. The food movement began as “a series of food safety scandals opened people’s eyes to the way their food was being produced, each one drawing the curtain back a little further on a food system that had changed beyond recognition.” (Pollan)

Alternative food production includes any method or system that goes against the highly-mechanized model of industrial agriculture. This includes small-scale production, participation in local food systems, community supported agriculture, farm to school movements and organic practices of agriculture. Alternative agriculture emphasizes the reduction of chemical inputs in farm practices and increased transparency. The movement aims to empower consumers and producers, promoting the transformation of food practices to live a healthier life while supporting positive social and environmental change. In many ways, the growth of the local and alternative food movements signifies a growing lack of trust in the government’s ability to regulate food and agriculture in a way that protects both environmental and human health. It signifies growing concerns on how diet affects health, the treatment of animals, and how food choices have an impact on the world.

More specifically, organic⁶² sales have risen in the past few year (see Appendix D). Of the \$5.5 billion in 2014 organic sales, \$3.3 billion or 60 percent came from the sale of crops, 28 percent came from livestock and poultry product sales (primarily milk and eggs), and 12 percent came from sales of organic livestock and poultry. In addition, consumer demand for local food,

⁶² To be certified organic meat, poultry, eggs, and dairy must come from animals that only eat organic feed (raised without synthetic fertilizers or pesticides and from crops that were not genetically engineered), and they cannot be given growth hormones or antibiotics. To see more requirements, go to <https://www.usda.gov/media/blog/2012/03/22/organic-101-what-usda-organic-label-means>

including local meat and poultry, has risen in recent years (Low and Vogel, 2011). Local⁶³ food sales in the U.S. grew from \$5 billion to \$12 billion between 2008 and 2014 and is expected to reach \$20 billion in 2019 ⁶⁴ as people are associating the term “local food” with “sustainable food”, freshness, and higher nutritional value. ⁶⁵

⁶³ The definition of local food varies and can be based on geography, local ownership, or marketing strategy. Packaged facts allowed consumers to decide what local food meant to them. Commonly, local food refers to food produced near the consumer—it is geographically localized

⁶⁴ <https://www.packagedfacts.com/about/release.asp?id=3717>

⁶⁵ <http://www.sustainabletable.org/254/local-regional-food-systems>

VII. Bottlenecks of Small Producers

A. Slaughterhouses and Meat Processing Facilities

Under the Federal Meat Inspection Act of 1906, farmers who want to sell meat commercially across state lines must get their animals slaughtered and processed at a meat plant that has been approved by the USDA. Government meat inspectors are required to be on the floor anytime those plants are operating. Nation-wide, the number of meat-processing centers has declined over the past three decades because the meat industry has turned to large facilities that can slaughter hundreds of animals in a day. In fact, the number of federally-inspected livestock slaughterhouses has experienced a net decrease between 1986 and 2016, falling from 1,544 federally inspected facilities to 808 facilities in the United States (see Appendix E).

There are far too few slaughterhouses to meet the growing demand for locally raised meat, particularly in the Northeast; and many small, family-owned slaughterhouses have closed upon the implementation of strict federal rules regarding health control (Shanker). Consolidation has left producers with fewer options for getting their livestock to market as access to these facilities become difficult and competition with larger processing centers increase.

Some argue that laws created to help inspectors monitor large facilities are ill-suited to small ones. J. Dudley Butler, the former head of the USDA's Grain Inspection, Packers and Stockyards Administration, states that there is a “terrible regulatory burden on small packing houses” (Krut). Chris Young, executive director of the American Association of Meat Processors, says that there is over-enforcement in smaller plants where all activities are concentrated in a very small area, perhaps in one room (Krut). A missed stun carries the label of an ‘egregious act’ and can result in anything from a non-compliance record to a suspension of inspection on the slaughter floor. This is a much higher level of enforcement than occurs in

larger slaughter facilities because their slaughter process is usually spread out over several rooms with inspection personnel concentrated on the post-mortem side and no inspector dedicated to just the kill floor.” Young also states that small producers have trouble financially, finding and maintain quality employees, and obtaining affordable employee insurance coverage (Krut).

The USDA’s Food Safety and Inspection Service offers a small plant help desk and help with regulations and trainings, but smaller operators do not have the financial resources and employees to go to trainings. Another option is to hire a USDA-approved mobile slaughter unit to harvest animals and process that meat on site, but those are few and can be costly as well.

Other challenges include booking as there are few slaughterhouses and existing facilities have limited processing space. Small producers have to schedule their slaughters months, or even a year, in advance as facilities get booked quickly. Finding a slaughterhouse that have high animal welfare standards is also difficult. Farmers dedicated to sustainable and humane practices on their farm thus often end up driving hundreds of miles, which is major stressor for animals ⁶⁶and associated with lower meat quality ⁶⁷, and the last hours or minutes in an animal's life can undo months of effort (Shanker).

B. Dairy Farms

As the number of dairy cooperatives have declined, dairy farmers have become dependent on buyers. Dairy farms, in New England, typically have to send its raw milk to a co-op, such as H.P. Hood, to be processed. In addition, dairy farmers have no control over the price of milk as it is set by the USDA through the FMMO, and is often too low to offset the other costs that small operators face when operating a dairy farm. Dairy farmers might create other products to increase revenue or transition to organic where retail prices are higher.

⁶⁶ <http://www.fao.org/docrep/003/x6909e/x6909e08.htm>

⁶⁷ http://animalstudiesrepository.org/cgi/viewcontent.cgi?article=1019&context=acwp_faafp

VIII. Examples

A. Overview of Selected States

1. Massachusetts

While nationally the U.S. witnessed a decline in agriculture from 2007 to 2012, Massachusetts was one of the few states to experience a 1% growth in both number of farms and acres in farmland (see Appendix H for map of average size of farms).

The dairy industry is a small but critical part of the state's agricultural economy, with a market value of \$48 million. Just 60 years ago, Massachusetts had 5,000 dairy farms.⁶⁸ In 2009, it had 180. Between 2003 and 2009 alone, the Commonwealth lost 50, or 22 percent, of its dairy farms, and its milk production dropped by 26 percent, or 86 million pounds.⁶⁹

In addition, the livestock and poultry sector has seen a large increase in demand for local meats and poultry. However, concern continues over whether the state's producers can meet the increasing momentum and demand for these products due to the limited number of slaughter and processing facilities. In Massachusetts, producers must have their livestock slaughtered and processed in a USDA inspected facility if they wish to sell the meat. There are only two USDA inspected slaughter facilities in Massachusetts—Adams Farm in Athol and Blood Farm in Groton. A few custom slaughter facilities also exist in Massachusetts, although they are not able to kill and process livestock for resale, and therefore serve commercial meat producers, since the facilities are not inspected by the USDA. Although there are a few slaughterhouses nearby, the

⁶⁸ Massachusetts Dairy Farm Revitalization Task Force Report to the Legislature, Nov. 9, 2007; http://www.massdairyfarmers.com/images/Nov_9_Task_Force_Exec_Summ.pdf

⁶⁹ National Agricultural Statistical Service, 2007 Census of Agriculture, http://www.nass.usda.gov/Census_of_Agriculture

number of USDA inspected livestock slaughtering establishments In New England⁷⁰ have been decreasing. In 1986, there were 52 and in 2016 there were only 25 (see Appendix E).

The lack of slaughtering and high quality processing options in New England is a major bottleneck for livestock producers in the region. The Livestock Institute⁷¹ is proposing to build and operate a small, flexible facility that will not only benefit farmers through better processing infrastructure but will invest in education and the local community. The proposed USDA-inspected slaughterhouse and processing facility will be built on a 10-acre parcel of land in Westport, MA owned by TLI. The project will include a new 10,000 square foot concrete and steel building, parking to support the facility, settling pens in a small barn and all the necessary equipment to operate a state-of-the-art USDA facility. They expect to handle approximately 2,000 large animals in the first year. However, the facility will have the capability to expand to 15,000 square feet and handle 7,500-10,000 large animals per year.

2. Vermont

Most of Vermont's land is hilly and rocky, making it an ideal place to raise livestock such as cows, sheep, goats and llamas. As of 2015, Cattle and calves account for \$88.7 million, and hogs for \$813,000⁷². Dairy products account for \$493 million, or 64%, of Vermont's agricultural economy. In 1975, Vermont had almost 4,000 dairy farms with 189,000 cows and they produced about 2 billion pounds of milk. The 1,075 dairy farms and 132,000 cows produced 2.6 billion pounds of milk in 2012, about 300 million gallons. Compared to 1975 Vermont has 75 percent fewer dairy farms and 30 percent fewer cows, but milk production has increased by 30 percent.⁷³

⁷⁰ New England refers to Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

⁷¹ <http://www.thelivestockinstitute.org/processing-facility.html>

⁷² <http://www.farmflavor.com/vermont/vermonts-top-10-ag-products/>

⁷³ <http://www.burlingtonfreepress.com/story/money/2016/06/09/dairy-farm-production-increases-in-vermont/85597744/>

As mentioned before, the number of slaughterhouses have decreased in the New England region, which raises concerns for bottlenecks of small producers in the state. For a map of slaughterhouses in Vermont see Appendix O.

3. New York

About 23% of New York State's land area, or 7 million acres, is farmland. As of 2012, there are nearly 36,000 family farms producing some of the world's best food. Within the total, 842 are certified organic, putting New York third in the nation for the number of certified organic farms. Overall, the average size of a farm in New York is 202 acres, up from 197 acres in 2007. In comparison, this is less than half the national average of 434 acres. Milk is New York's leading agricultural product; milk sales account for \$2.42 billion of the total agricultural receipts. Cattle and calves account for \$450 million.⁷⁴

As New York loses more and more small family farms every year, CAFOs are taking over our rural landscape (see Appendix H for average farm size). In 2003, the New York Agricultural Statistics Service reported that New York lost 1,000 small farms; at the same time the number of larger farms increased. In 1994, farms with 200 or more cows represented only 18 percent of New York dairy farms. By 2003, farms with 200 or more cows had grown to make up 41 percent of New York dairy farms.

As the size of CAFOs has increased, the land available for farmland and the disposal of manure has decreased. Between 1997 and 2002, New York lost 127,000 acres of farmland, an average of 70 acres per day.⁷⁵ In addition, the number of slaughterhouses have also decreased. In New York, the number of USDA inspected livestock slaughtering facilities decreased from 88 in

⁷⁴ <https://www.agriculture.ny.gov/>
http://www.osc.state.ny.us/reports/importance_agriculture_ny.pdf

⁷⁵ Ibid

1986 to 39 in 2016 (see Appendix E). This raises concerns of bottlenecks of small producers. For a list of USDA inspected slaughterhouse map in New York see Appendix I.

B. Transparency

1. Slaughterhouse Facility

Live Poultry Market (Brooklyn, New York) (see Appendix K for photos)

Walking along 63rd street in Brooklyn, New York City, you will pass an auto parts warehouse, a store to sell your metals or stainless steels, a place to buy roofing supplies or masonry products, and finally a live poultry market. You will not miss this as a bright yellow sign blares the words “LIVE POULTRY”, “viveros¹”, and “halal”, with doors displaying cartoonish images of roosters, ducks, lambs, bunnies, and cattle standing on grassy areas. As you enter, you see little children running around, people taking photos, and customers pointing at the chicken they want. The workers and customers are composed of Asians, Hispanics, and Middle Easterners which reflect the immigrant population of the neighborhood.

The birds are all clustered together in metal cages. They appear a bit dirty and stoic. When it is your turn, you point to the bird you desire. The bird is then weighed in a plastic bucket dangling from a scale, tagged with a paper stating your order number and its price, and then placed in a shopping cart. The worker then severs its jugular veins/carotid arteries with a sharp knife, hangs it upside down in a cone to drain out the blood quickly, and throws into a scald-water tank to loosen its feathers. They then de-feather, clean, and cut it into pieces, depending on the customer’s preference. Throughout the process, the workers appear calm as they do all this. Aside from chickens and ducks displayed at the front of the store, this poultry market keeps lambs and goats in two back pens, which aren’t spacious. A customer can either pick one out and take it whole or wait until Friday where the market slaughters them and cuts

them into pieces. The length of stay of these animals vary, from the day they arrive to several weeks.

According to Anne Barnard, there are over eighty of these poultry markets in New York City. It is a part of an immigrant-driven market in metropolitan areas that is reviving the practice of seeing the live animal that will soon become your meal. When I entered the store, my father and I asked if we could see the chicken being slaughtered. Initially, he seemed confused on why I wanted to see the process, but I told him that I was curious. He then said, “Yes, of course. You can see. It’s right over there. Do you want to kill one too?” I refused, and went to see. The worker that was slitting the throat of the chicken turned to me and asked if I wanted to kill my chicken. Once again, I refused and asked if I could enter and take photos. He allowed me. The whole place was very transparent and open of their practices. The main attraction of these markets is the relative ease of seeing the animals you are going to eat. Talking to my father and having a brief discussion with the other customers that were in the market, I concluded that they believed chickens bought there were fresher and tasted better. They believed that they got more for their money when compared with the supermarket variety where their food is coming from large scaled food processors, such as Tyson Food. They were also more confident that they knew what they were getting, after all, they picked out the bird. Most of the clients were immigrants, who have grown on farms or have less experience with industrialized systems of animal production and they did not seem obsessed with animal welfare or organic feed, but instead with the idea of transparency and seeing that the chicken they chose was relatively healthy, indicating it will probably taste better.

However, there have been some concerns with these live poultry markets. Some animal activists do not like the way the animals are treated. As I have witnessed, lambs have limited

space to walk around, multiple chickens are crammed in metal-wired cages, live in their own feces at times, and remain conscious before slaughter. My father also bought a bag filled with multiple parts of chickens: feet and heads. I inspected all of them and noticed a few things. There were some with light green markings/bruises, damaged claws, and black brown scab on the bottom of the foot. In addition, local residents are worried about the smell, proper waste disposals, and disease outbreaks. There has also been concerns due to the lack of monitoring of these spaces due to uncertainty in regulations and inadequate number of inspectors to ensure compliance. According to a New York State legislative bill that was passed in 2016, licensing of any new live animal slaughter markets will be prohibited within 1,500 feet of a private residence. This resonates with other “not in my backyard” movements. Perhaps as local food movements gain more support, these small-scale slaughterhouses might gain a firmer foothold in the food supply landscape.

Despite the apparent visibility of these spaces, there are several things that cannot be seen. Birds in New York City markets come mainly from Pennsylvania, New Jersey, and New England. In this case, the chickens come from “Amish farmers in Pennsylvania” where they are transported nationwide, as told by the worker. The conditions in which they are brought from are unknown, and some of these places are not certified organic or humane. From what I have gathered during this experience is that transparent slaughterhouses like these are considered vital to the understanding of what happens to the animal before they become food. These markets are not disguising their presence, but instead allowing their customers to decide for themselves what to do with this knowledge. This is different from other agricultural industries, where livestock production and slaughtering practices are unknown or difficult to publicly access. Mike Wolf insists that “meatpackers are the ones who have created the necessity for undercover

investigations by blocking consumers from seeing how their food is made. With the government working hand in hand with business, the only remaining window into the food system is the lens of an activist's camera" (Genoways).

Under so called ag-gag laws, taking photos of videos on farms could be illegal (Richie). There are ongoing debates between industries and animal rights activists who want to make these practices easily visible to consumers. They are relying on this idea of politics of sight, which according to Pachirat, is the organized attempts to make visible what is hidden and to breach zones of confinement to bring about social and political transformation (236). These hidden cameras, however, provide our only view onto the meatpacking industry. A concern of these undercover investigations done by activists is that the video might be edited down to short clips or narrated to distort what is happening at these places. According to Genoways, these are a pinhole, not a panorama of what is occurring.

There are several things that the public is unable to easily view from agricultural industries which has then led to undercover investigations being done. All of this stands in contrast to live poultry markets in urban areas, such as in New York City, where you are free to view what happens to the animal that then becomes the food you eat. Coming in to this market, I was uncertain if they would allow me to take photos or even see the workers kill the chickens. I was astounded by the openness presented to me. Despite this transparency, there have been several backlashes to these spaces due to the public health concerns.

2. Farm

Hill Top Farm (Pownal, Vermont) (See Appendix N for photos)

Hill Top Farm is an organic milk and beef farm. The farm has been running for over 20 years and transitioned to organic 17 years ago. The incentive was financial as price tends to stay

constant and higher for organic milk. There are around 50 cows who are milked twice a day. Matt Gardner, owner of Hill Top, says that it has not been an issue not being allowed to use antibiotics as the cows tend to be healthy since they are grass fed, are under low stress conditions, and have their somatic cell levels monitored. The cows live up to 10-12 years and when their time comes, they are either bought by a customer or sent to a live auction in Cambridge, NY.

Matt believes that being transparent and always making sure that you are taking care of the animals well is important. Inspectors can come in at random times, so it is better for everyone if the barn is always complying with the regulations. Transparency can, however, be an issue sometimes. Some people who come to the farm do not understand some of the things that are occurring and dislike the sight and smell of manure at the barns. Matt states that asking and answering questions is important to fully understand what is happening and how and where your milk is being made.

Other Farms Near Williamstown Practicing Alternative Farming Methods with the Mission of Being Transparent of its Practices:

Square Roots (Lanesborough, MA): Ashley Amsdan and Michael Gallagher raise chickens and porks on pasture. Their diets are supplemented with locally grown, non-GMO feed. Their cows and calves eat only grass and hay and rotationally graze the farm to enjoy top-quality pasture and improve the fields. To reduce stress and ensure humane handling, they process the chickens directly on the farm in their state inspected processing unit.

Black Queen Angus (Berlin, NY): ⁷⁶ Morgan Hartman raises Animal Welfare Approved 100% grass fed Black Angus cattle. Hartman believes in eating responsibly. The top priorities

⁷⁶ www.blackqueenangus.com/index.php?option=com_content&view=article&id=2&Itemid=107

are soil improvement and animal health based on soil fertility. In regards to the cattle, heavy emphasis is placed on “maternal efficiency” and “longevity”. The cattle are also line-bred.

Tilldale Farm (Hoosick Falls, NY):⁷⁷ The Tilleys transitioned to certified organic 13 years ago. They do not use antibiotics, hormones, insecticides, or herbicides in their farming practices. The Devon cattle are raised on pasture on a rotational grazing system. Grass feeding produces meat that is high in CLA’s and OMEGA 3’s.

Hill Hollow (Petersburgh, NY):⁷⁸ This is a family owned, small scale farm. When it was raised by Eliza and Nathan Winters, the farm produced grass-fed beef, pasture-raised port, and poultry and operated an organic vegetable CSA. They believed in practicing environmental sustainability.

Local Meat Processing Facilities Nearby:

Hilltown Pork (Canaan, NY):⁷⁹ Hilltown Pork is a USDA Inspected, Animal Welfare Approved Program Slaughter & Processing Facility. It specializes in custom processing of all species for local farmers for personal consumption and resale. They do wholesale of whole carcass pigs, sheep, and goat.

Stratton’s Custom Meat and Processing (Hoosick Falls, NY):⁸⁰ Stratton is a custom meat facility that services in upstate NY areas as well as Southern Vermont and the Berkshires of Massachusetts. It is not USDA inspected so there are no retail sales, and the owner does not plan to do so either. Stratton does mobile slaughtering on site. This does not require hauling animals to the slaughter house, which reduces stress for the animal. This results in better quality meat. The meat is hung, aged, and butchered in the facility to the customer’s

⁷⁷ <http://tilldalefarm.com/contact.htm>

⁷⁸ <https://www.localharvest.org/hill-hollow-farm-M56457>

⁷⁹ Hilltownpork.com

⁸⁰ <http://www.benningtonbanner.com/stories/strattonrsquo-s-custom-meats-expanding,252537>

specifications. Beef is sold by the quarter, half, or whole, and pork by the half or whole. The beef comes from local farms who raise the cows on pasture, and the pork comes from farms who raise the pigs on grain.

Vermont Packinghouse (Springfield, VT):⁸¹ Opened in 2014, Vermont Packinghouse is certified organic and USDA inspected. The plant prides itself on its transparency and appears to be one of the few in the country to have a glass-walled slaughterhouse. The owner, Arion Thiboumery, welcomes tours and will answer all questions about how the animal was raised and how it gets slaughtered. They usually take in small farms, meaning farmers bringing in 1-10 animals once a year, but also commercial accounts bringing in 10-30 beef or 10-20 pigs once a week or month with the largest customers bringing in 60 pigs. The holding pens were designed by Temple Grandin's firm and meet the standards of Grandin, "a pioneer in humane livestock handling" (Abels). The high walls and horseshoe design keep the animals calm.

B. Transparency & Bottlenecks

1. Eagle Bridge Custom Meat Slaughterhouse (Eagle Bridge, NY):

Eagle Bridge is a USDA Animal Welfare approved facility. This means that animals are brought in and treated with care under the eye of the on-site USDA inspector who upholds the Animal Welfare Institute guidelines regarding temperature control of the facility, feeding practices, pen space, and handling processes. There are about 15 full-time workers. Debbie Farrara, owner of Eagle Bridge says that transparency, traceability, food safety, and business practices with humane standards ensure quality.⁸² The process of being certified, however, was difficult. It required a massive facility expansion and a seven-figure investment. Other challenges

⁸¹ http://www.huffingtonpost.com.mx/entry/slaughterhouse-photos-transparency-vermont_us_57bde785e4b085c1ff270085

⁸² <http://www.meatpoultry.com/Writers/Other-Contributors/Sizeable-obstacles.aspx?cck=1>

included finding a bank for loans to expand the facility, finding sources for disposal and rendering services, cost of insurance, and an increase in inspection regulations.⁸³

It is open year-round, but booking a slot to get livestock slaughtered takes up to six months in advance to plan as Eagle Bridge only slaughters about 20 head of cattle, 30 pigs, and 50 lambs per week.⁸⁴ Its first year was booked solid. It's tight schedule highlights what many small-sized farmers and local livestock owners say is a pressing need: access to a safe, clean and dependable slaughterhouse. Eagle Bridge has helped fill this gap of meat processing facilities in New York, as small slaughterhouses in the Northeast have been declining. Farmers say that this lack of facilities lead to more time away from the farm for farmers who must transport animals to a slaughterhouse. The transportation itself increases costs and diminishes the end-product as animals get stressed. Still, farmers who raise animals in the area say they are better off than most of their peers across the country.⁸⁵ It benefits from the growing trend of eating locally produced food, especially that in the Northeast, and outbreaks of disease attributed to massive meat processing operations that have strengthened this trend.

2. Cricket Creek Farm (Williamstown, MA) (see Appendix L for photos)

Cricket Creek is a small dairy farm in Williamstown. The farm has Brown Swiss and Jersey dairy cows, Hereford and Black Angus beef cows, whey-fed mixed heritage breed pigs, and laying hens. The cows rotationally graze on pasture for half of the year, and the other half eat hay. The pigs eat whey. The farm milks between 20 and 30 cows, twice a day. They are licensed to sell raw milk on-site as state law prohibits the farm from selling in farmer's markets or

⁸³ Ibid

⁸⁴ <https://dailygazette.com/article/2011/02/20/0220meatOL>

⁸⁵ http://poststar.com/news/local/article_aa5835f6-8d53-11df-8fa0-001cc4c002e0.html

anywhere not on the farm. They make the rest of the milk into artisanal cheese to increase revenue.

Cricket Creek is animal welfare approved.⁸⁶ After talking with Topher Sabot, owner of Cricket Creek, I learned that the farm decided to become animal welfare certified, instead of organic certified. Topher believed that organic standards currently do not place a great emphasis on animal welfare. In addition, he believed that antibiotics should be used if a cow became ill. Under organic standards, antibiotics would not be allowed and the cow would no longer be deemed useful. He believes that farmers should have a caring relationship with the animals and that consumers should deepen their connection with farms and their understanding of the food they eat.

In regards to transparency, Topher believes that people should know where their food is coming from. Being transparent, however, does come with a few misunderstandings from the public. For instance, last year Topher allowed his cows to graze on the grass in the front lawn as he thought it would be healthy for them to do so. He, however, received complaints from customers. There was outrage over having the cows on the front lawn. Even though this was a small issue, Topher states that transparency opens lots of issues to the farm, especially if people do not understand what is occurring and do not ask questions.

In regards to slaughtering, the beef cows are slaughtered at Eagle Bridge as they are Animal Welfare Approved. After talking to Topher, I learned that he has to schedule all his slaughtering way in advance- at least six months. He sometimes receives requests from restaurants asking for specific meats from the farm, but since Eagle Bridge gets booked very quickly, he cannot give them what they want. Fortunately, Topher states that he has a good

⁸⁶ <https://www.aspca.org/sites/default/files/frm-wlfr-cert-guide-feb2017.pdf>

amount of business since local food is becoming a trend and Williamstown is filled with wealthy people. The lack of slaughterhouses in Massachusetts does not affect him as Cricket Creek is near Eagle Bridge in New York, but does note that other farms do travel over 2 hours to slaughter their livestock at Eagle Bridge for their animal welfare approved practices. More slaughterhouses should be established in areas where it is currently hard to access one.

3. High Lawn (Lee, MA):

High Lawn Farm is one of last commercial dairy operations in Berkshire County that bottles its own milk. It has been operating since 1923. The entire herd consists of Jersey cows, which according to Roberto Laurens, general manager of High Lawn, gives milk that is more nutritious and healthier than that of a Holstein. The farm is not organic and when asked why not Roberto reiterated the idea that the use of antibiotics is needed in case a cow gets sick.

After talking to Roberto, I learned that the farm has an advantage over the typical small dairy farm because it can sustain over 100 cows, is near several places and institutions such as Williams College that want local milk, and has “capital” from an inheritance given to the owners. It even added a milk processing plant in 2015, which allows cows to milk themselves and requires less workers to be on-site. As a result, High Lawn does not experience the troubles smaller farms face due to consolidation and a decrease in cooperatives. In regards to transparency, Roberto says that people want to know where their milk is coming from and that the farm encourages people to go on a tour to witness the process. Roberto says that so far, he has had no issues with being transparent.

4. Corse Farm (Whitingham, VT) (see Appendix M for photos)

Corse Family Farm, located on beautiful green slopes at an elevation of 2,000 feet in Vermont, is an organic farm with a herd of about 60 cows- Holsteins, Jerseys, and Red and

Whites. Leon and Linda Corse, as well as their daughter Abbie Corse, are the fifth generation to farm here as the farm has been in the family since 1868. Today, they are members of both Agrimark and Organic Valley and conserves the farm with the Vermont Land Trust. They rent land from 26 local families, have a greenhouse-styled barn where cows are housed, and a milking parlor and house where cows are milked once a day.

They have been certified organic since 2008. According to Leon Corse the transition to organic was lengthy. Because synthetic fertilizer has been used on the pastures, the Corses had to wait a few years for land transition. Herd transition was not as difficult. They started off with just 50% grain/50% organic feed for a few months, and then fully transitioned to 100% organic feed. This one year process had regular checkups. Leon states that the original incentive in becoming organic was financial as price for milk stays constant and trend for organic products have been increasing, but now sees how it benefits the cows and the environment.

The Corses practice rotational grazing. The soils on every land and pasture are tested. Manure and organic fertilizer are tailored to the soil test requirements. No antibiotics are used—garlic or Advil are used if needed. Cows are fed organic grain based on milk production. Somatic cell count is checked to monitor milk quality. They are able to do all this because they receive a lot of help and resources from Organic Valley, who are accessible and always have a veterinary on call.

Leon Corse says that transparency is key to dairy production in educating children and consumers. People should know where their milk is coming from. They have not had any problems with being open about their practices. Answering all questions is important to avoid any misunderstandings.

5. East Mountain Farm (Williamstown, MA):

East Mountain Farm raises beef cattle, pigs, and chickens. After talking to Kim Wells, owner of the farm, I learned that it is not organic. The beef cattle graze on the pasture, and eat hay and grain. The pigs eat grain. The primary pushback in not transitioning to organic was the use of antibiotics, which has been reiterated by the other farmers. In regards to the idea of transparency, he has had no issues. The only issues that arise are during Farmer's Markets. There is this misconception that local food means organic so people are surprised to find out that his products are not organic and that the animals are not all grass fed.

In terms of slaughterhouses, Kim says that he takes his cattle and pigs to Eagle Bridge. It is nearby so that is not an issue. He, however, has to take his poultry to another facility in Rhode Island as that facility is the only one nearby that he trusts to handle his chickens humanely. He drives at least 3 hours to get there. He then picks the products a few days later. He says that this is time-consuming so when he goes to Rhode Island, he has to take over 50 of them at once.

Common Findings:

1. Transparency and gaining a deeper understanding of where our food/milk comes from is important
2. Transparency can lead to misunderstandings, if questions are not asked
3. Farms in the Berkshire area, southern VT, and eastern NY tend to not have an issue with the lack of slaughterhouses in the area since they tend to be close to one. Some farms are willing to travel hours to find a humane slaughterhouse
4. Even though some farms were not organic, they strived to achieve some sort of environmental sustainability or greater connection with the animals

IX. Current Policies/Laws/Regulations

A. Environmental Law and the Agricultural Industry

1. America First: A Budget Blueprint to Make America Great Again ⁸⁷

The President's 2018 Proposed Federal Budget requests \$17.9 billion for USDA. This is a \$4.7 billion decrease from the 2017 annualized continuing resolution level of government funding. This eliminates duplicative Water and Wastewater loan and grant program, reduces funding in activities in rural development and business, and cuts subsidies and crop insurance. In addition, it requests only \$5.7, a \$2.5 billion decrease to the EPA. In addition to shutting down the Office of Environmental Justice, the Environmental Integrity Project said that the figures showed that the Trump administration is "off to a very slow start" when it comes to enforcing environmental law. It said that the cases this year "are smaller, requiring much less spending on cleanup, and resulting in fewer measurable reductions in pollutants that end up in our air or water."⁸⁸ The Trump administration also lags the three previous presidential administrations in the amount of injunctive relief and the amount of air pollution reductions (see Appendix P).

Moreover, the amount of cheap labor needed to deliver inexpensive chicken to consumers and keep large firms remain competitive in the poultry industry leads to an influx of undocumented immigrant workers (Striffler). The deportation of undocumented immigrants could have a drastic effect on the agricultural industry. According to a study by the American Farm Bureau Federation, if farmers lost all access to undocumented workers it could cause agricultural output to plunge by \$30 billion to \$60 billion and it could force food prices higher by

⁸⁷ White House's fiscal 2018 budget blueprint can be found:

https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/2018_blueprint.pdf

⁸⁸ https://www.washingtonpost.com/news/energy-environment/wp/2017/08/10/polluter-fines-drop-60-percent-under-trump/?utm_term=.5d5bb6a76d4a

<http://www.environmentalintegrity.org/wp-content/uploads/2017/08/Enforcement-Report.pdf>

5 percent to 7 percent.⁸⁹ A 2015 report by the National Milk Producers Federation also states the price of milk would jump to \$6.40 a gallon if U.S. dairy farms were deprived of access to immigrant workers.⁹⁰

2. Waterkeeper Alliance v. EPA⁹¹

On April 11, 2017, the U.S. Court of Appeals for the D.C. Circuit struck down a rule, issued by the EPA, that exempted livestock farms from reporting hazardous air emissions from animal waste. EPA initially proposed the rule in 2008. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) all farms were exempt from report air emissions, and under the Emergency Planning and Community Right to Know Act, only large CAFOs had to report. Environmental organizations first challenged the rule in court in 2009, but then reopened the litigation in 2014. Unless EPA appeals to the Supreme Court, livestock farms must report air emissions starting this year.

B. Animal Welfare

1. Organic Livestock and Poultry Practices Rule

The current USDA organic regulations have broad and general requirements for ensuring the well-being of organic livestock and poultry. For all organic livestock, the regulations already require an environment that allows animals to express natural behaviors; preventive practices to reduce the likelihood of illness; and protection from conditions that jeopardize an animal's well-being, such as predators and adverse weather. The Organic Livestock and Poultry Practices Rule (7 CFR Part 205 [Doc. No. AMS–NOP–15–0012; NOP–15–06]) adds more details to animal

⁸⁹ http://www.fb.org/files/AFBF_LaborStudy_Feb2014.pdf

⁹⁰ <http://www.nmpf.org/files/immigration-survey-090915.pdf>

⁹¹ 853 F.3d 527 (D.C. Cir. 2017), slip opinion available at [https://www.cadc.uscourts.gov/internet/opinions.nsf/2E91F70B0AF28BBE852580FF004E33FF/\\$file/09-1017-1670473.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/2E91F70B0AF28BBE852580FF004E33FF/$file/09-1017-1670473.pdf).

production and handling requirements of organic production, which will ensure consistency and transparency across organic production and handling systems, bolster consumer confidence, and strengthen the market for organic products. This rule⁹²:

1. Requires that producers provide animals with daily access to the outdoors and that outdoor areas include vegetation and/or soil. Additionally, exit doors must be distributed to ensure animals have ready access to the outdoors. It does not allow enclosed porches to be considered outdoors or to meet the requirement for outdoor access.

2. Specifies the amount of space required indoors for chicken broilers and layers, prohibits forced molting, restricts the use of artificial light, limits the amount of ammonia in the air indoors, and requires perching space for laying chickens indoors.

3. Describes when producers can confine animals indoors temporarily and codifies flexibility for producers to confine animals when their health, safety or well-being could be jeopardized.

4. Adds humane handling requirements for transporting livestock and poultry to sale or slaughter, and clarifies humane slaughter requirements.

5. Prohibits several kinds of physical alteration, like de-beaking chickens

6. Provides a phased implementation plan

Trump's USDA's Agricultural Marketing Service (AMS), however, has delayed the effective date of this rule published on January 19, 2017 twice to November 14, 2017 (82 FR 9967).⁹³

C. Public Health

1. Guidance for Industry or GFI #213

⁹² <https://www.gpo.gov/fdsys/pkg/FR-2017-01-19/pdf/2017-00888.pdf>

⁹³ www.federalregister.gov/documents/2017/05/10/2017-09409/national-organic-program-nop-organic-livestock-and-poultry-practices.

On January 3, 2017, the U.S. FDA announce the completion of the GFI #21 a process begun in 2013 to transition antimicrobial drugs with importance in human medicine (medically important antimicrobials) that are used in the feed or drinking water of food-producing animals to veterinary oversight and eliminate the use of these products in animals for production (e.g., growth promotion) purposes. This is in response to superbug concerns.⁹⁴

D. Ag-Gag Laws

1. Animal Legal Defense Fund et al v. Herbert, D. Utah, 13-cv-00679

On February 8, 2013, Plaintiff Amy Meyer became the first person to be charged under the new ag-gag law in Utah, and seemingly the only person in the country to ever be charged under an ag-gag law. Meyer was arrested while filming what appeared to be a bulldozer moving a sick cow at a slaughterhouse in Draper City, Utah. The case against Meyer was later dismissed (Woodhouse).

Meyer, along with Animal Legal Defense Fund (ALDF) and People for the Ethical Treatment of Animals (PETA), subsequently filed this lawsuit against the State. Plaintiffs challenge the Act as an unconstitutional restriction on speech in violation of the First Amendment and as a violation of the Equal Protection Clause of the Fourteenth Amendment. In support of the Utah law, groups argue that undercover activists pose a threat to biosecurity by concealing their employment history. The court concluded that Utah Code § 76-6-112 is unconstitutional.⁹⁵ The Utah decision was the second trial court to strike down such a statute,

⁹⁴ <https://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm535154.htm>

⁹⁵ https://www.bloomberglaw.com/public/desktop/document/Animal_Legal_Defense_Fund_et_al_v_Herbert_et_al_Docket_No_213cv00?1503308286

after a federal court in Idaho in August 2015 found a similar law unconstitutional on its face (Animal Legal Defense Fund v. Otter , D. Idaho, 14-cv-104).⁹⁶

E. Bottlenecks of Small Producers

1. PRIME Act

Farmers who sell meat by the cut must use a slaughterhouse that has a USDA inspector on-site during the actual slaughtering. The number of slaughterhouses, however, have drastically declined since the passage of the Wholesome Meat Act of 1967. At the time the act was passed, there were nearly 10,000 slaughterhouses in the country. As of January 1, 2017, there were 2,732 per the latest USDA statistics (Livestock Slaughter 2017 Summary, 62). According to Farm-to-Consumer Legal Defense Fund President Elizabeth Rich, consolidation has led to four companies controlling over 80% of the beef processing, and four companies controlling over 60% of pork processing.⁹⁷ The bottleneck caused by the lack of slaughterhouses has led farmers unable to meet the overall demand for locally produced food or hauling livestock and poultry several hours to a distant facility. Currently, farmers could use custom slaughterhouses, where USDA inspectors do not have to oversee daily operations, to process their own animals, but these large quantities of meat cannot be labeled and commercially sold.

Legislation is being supported to give states the option of passing laws to allow the commercial sale of custom-slaughtered and -process meat within state lines. On May 25, 2017 Representatives Thomas Massie and Chellie Pingree, and Senators Angus King and Rand Paul reintroduced the Processing Revival and Intrastate Meat Inspection Act (PRIME) (H.R. 2657 and

⁹⁶

https://www.bloomberglaw.com/public/desktop/document/Animal_Legal_Defense_Fund_et_al_v_Otter_et_al_Docket_No_114cv0010?1503310079

⁹⁷ <http://www.npr.org/sections/thesalt/2015/10/15/448942740/small-meat-producers-take-their-slaughterhouse-gripes-to-congress>.

S. 1232).⁹⁸ Custom slaughterhouses are generally small facilities where often only a few animals are slaughtered and processed each day. This will lessen the burdens on producers as it will make it easier to process meat locally, increase support of local farmers, and meet consumer demand for local food. Opponents, such as the National Pork Producers Councils, argue that the bill could harm consumer confidence in the nation's food supply. Others including lobbyist Tony Corbo for the consumer advocacy group Food and Water Watch, as well as Eric Mittenenthal of the North American Meat Institute say that this bill will pose a greater risk for food safety without strict federal regulations.⁹⁹ Thomas Massie, however, argues that federal regulations have "failed to protect the public from mass recalls and very large outbreaks of food-borne illnesses." These custom, state-regulated slaughterhouses tend to be small in scale which will provide more accountability and safer products.¹⁰⁰

⁹⁸ Ibid

⁹⁹ Ibid

¹⁰⁰ <https://www.bloomberg.com/news/articles/2017-05-23/there-aren-t-enough-slaughterhouses-to-support-the-farm-to-table-economy>

X. Recommendations for Policy Changes

A. CAFOs

Congress should reform federal farm policies to stop encouraging overproduction of corn, soybeans, and other commodities that have resulted in cheap feed for animals in factory farms. Increase feed costs or decrease subsidies to produce grain.

B. Environment

The EPA and states should create and enforce stronger pollution laws and water use standards, as well as pollution reporting requirements. These would include mandatory (not voluntary as it currently is) nutrient management plans for agricultural land, pricing to regulate water use, and proper manure management. Incentives for sustainable agricultural techniques should be maximized or a cap on the size of the livestock operations that receive EQUIP funding so that large fines can be imposed for those who violate air and water quality standards should be introduced.

An information disclose inventory for CAFOs should be created, where individuals must report to the national government and to the public the quantities of potentially hazardous chemicals being stored or released into the environment.

While speaking to Jay Healey, former state legislator, agricultural commissioner, and Massachusetts State Director under the USDA, I learned of several programs he has helped create or has sponsored. This included the Farm Viability Enhancement Program, which protects farmland by helping farmers increase the profitability and environmental viability of their farms. Another program was the APR program which preserves and protects agricultural land, including designated farmland soils from being built upon for non-agricultural purposes or used for any activity detrimental to agriculture. This program also maintains APR land values at a level that

can be supported by the land's agricultural uses and potential. It basically helps small farmers, and thus more local food on the table, by keeping land affordable. Other programs he sponsored was the Water Management Act and the Integrated Pest Management Program. States could introduce similar programs to help the environment and small farmers.

C. Public Health

The placement, expansion, and regulation of CAFOs in communities should be heavily regulated. The amount of CAFOs in low income, minority communities should be limited as to reduce the environmental injustice occurring. If pollution and water use regulations are enforced, proper manure management plans are introduced, and an information disclosure inventory is required as mentioned in Section B, then public health risks can be reduced.

D. Animal Welfare

Although only 33% of grocery shoppers view themselves as well informed about claims such as hormone/steroid/antibiotic-free, cage-free, free-range, pasture-raised and certified humane, nearly two-thirds of consumers agree that humane treatment of animals raised for food should be a societal concern and a regulatory issue.¹⁰¹ More than half of U.S. consumers (58%) are more concerned about food animal welfare now than there were just a few years ago.¹⁰² According to a 2012 ASPCA study, 67 percent of respondents were willing to pay more for a humanely raised chicken.¹⁰³ There is a rising interest in animal welfare issues is due, in part, to consumers' increased concern about the safety of their food and the growing belief that if an animal is raised in healthy circumstances, then its meat and dairy products will be healthier, better-tasting and more nutritious.¹⁰⁴

¹⁰¹ <http://www.feedstuffs.com/news/survey-more-consumers-concerned-about-animal-welfare>

¹⁰² Ibid

¹⁰³ https://www.asPCA.org/sites/default/files/publicmemo_asPCA_labeling_fi_rev1_0629716.pdf

¹⁰⁴ Ibid.

1. Farm Bill: The last three farm bills have included provisions aimed at preventing animal cruelty, including strengthening the federal animal fighting statute and barring the import of puppies from foreign puppy bills. Animal welfare reforms for livestock, poultry, and dairy cows could be included in the upcoming farm bill.

2. Poultry: The term “livestock” in the Humane Methods of Slaughter Act could be redefined to include poultry and states that already have humane slaughter acts could adopt amendments to include poultry. By including poultry in current laws, chickens can live a dignified life while at the same time motivate industries to create a product with added consumer value.

3. Organic Agriculture: For “organic” to be even more meaningful to consumers, the USDA needs to specifically address animal welfare with standards that require outdoor access for chickens, end the use of feed additives meant to replace the nutrients chickens would get from foraging outdoors, and outline specific animal welfare practices for stocking density, handling and transportation.

E. Ag-Gag Laws

Ag-gag laws ought to be unconstitutional in every state. Heightened First Amendment scrutiny should be places on these laws.

F. Bottlenecks

There are no “one size fits all” solutions for the bottlenecks that have occurred for small producers. As of right now, Massachusetts does not have a state inspected program and only has two USDA inspected facilities but has an increasing demand for local food. Massachusetts could implement several state-inspected plans or provide more financial assistance so that establishing a USDA inspected plant or a mobile slaughter unit could be feasible. Vermont could help existing processor enhance and expand their businesses to meet local demand.

XI. Directions for Future Research

Several people and organizations can be interviewed. This includes health professionals, governmental policy makers and local officials, and representatives from animal welfare or environmental advocacy groups in the tristate area. Those involved in the sustainable or locavore food movement such as Amy Cotler and Will Allen, and humane slaughter practices such as Temple Grandin can also be interviewed. Farms, including small ones and CAFOs, and slaughterhouses in the Midwestern states where “factory farming” is prevalent should be examined and compared to those explored in this report. Owners from places in Massachusetts where lack of slaughterhouses are a problem should be visited to fully assess this issue. Retailers and restaurant owners could be questioned about the problems that they face. Moreover, California’s and Massachusetts propositions towards humane cages should be monitored to see the effects they have on farmers and how enforcement is being handled.

Summary

CAFOs are transforming the way the United States is producing meat and dairy products. Productivity and efficiency have increased due to several advancements in technology and science. This, however, has incurred a cost to the environment, animal welfare, and public health. Several parts of the production process are even difficult to view as ag-gag laws have been passed to make it illegal. Transparency in farms and slaughterhouses, however, is important as it changes our relationships with the nonhuman animals and our perspectives of the meat industry and of our food.

In addition, several federal and state policies and programs have been implemented to regulate livestock and dairy production as well as to address several of the concerns. There, however, still has to be significant policy reforms. Small victories at the local and state level, such as that with Question 3 in Massachusetts, may eventually lead to significant reform at the federal level as initial success in one state builds momentum in other states.

Moreover, the rise of CAFOs have led to a decrease in small farms in the United States. The decline in slaughterhouses in certain areas have even caused a bottleneck of small producers. There are far too few slaughterhouses to meet the growing demand for locally raised meat, particularly in the Northeast states. Changes out to be made in federal and state policies that address issues created by CAFOs and this bottleneck that has been created in the past few decades.

Acknowledgements

First, thank you to all the people who agreed to be interviewed and allowed me to visit your place of work. Thank you to Professor Henry Art for your guidance and suggestions of places to visit. Finally, thank you to CLiA for funding my research. I would not have been able to do so without it. Thank you.

Appendix A

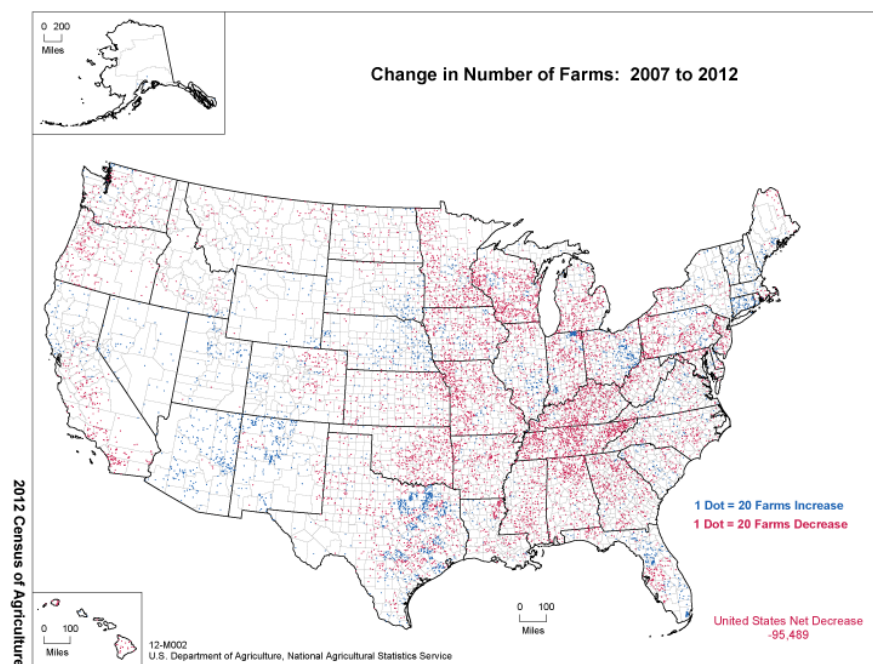


Figure 1. Change in Number of Farms from 2007 to 2012

Source: U.S. Department of Agriculture

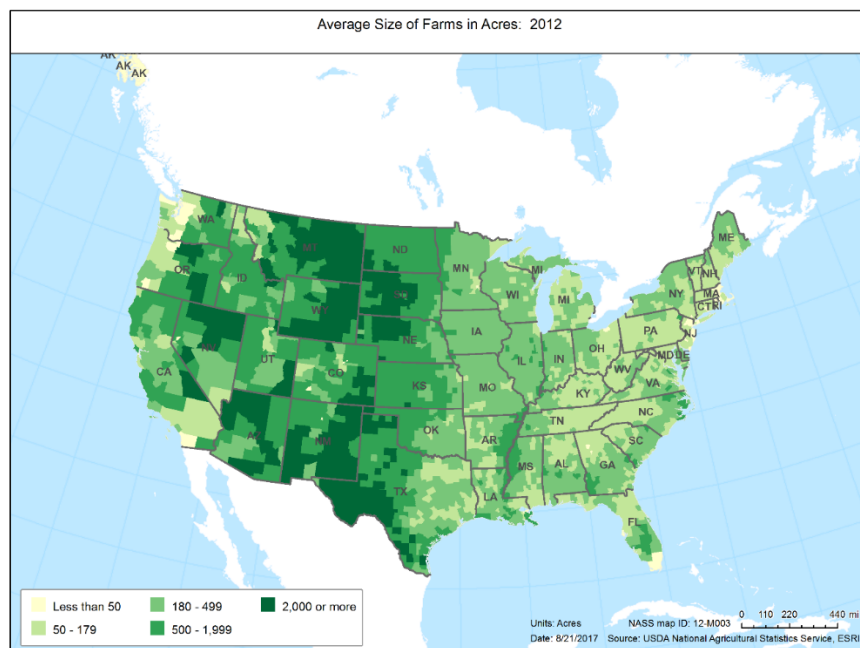


Figure 2. Average Size of Farms in Acres in 2012

Source: USDA National Agricultural Statistics Service

Appendix B



Figure 3. Randall County Feedyard, Amarillo, Texas (2013)

Source: <http://mishkahenner.com/filter/works/Feedlots>



Figure 4. Coronado Feeders, Dalhart, Texas (2013).

Source: <http://mishkahenner.com/filter/works/Feedlots>

Appendix C

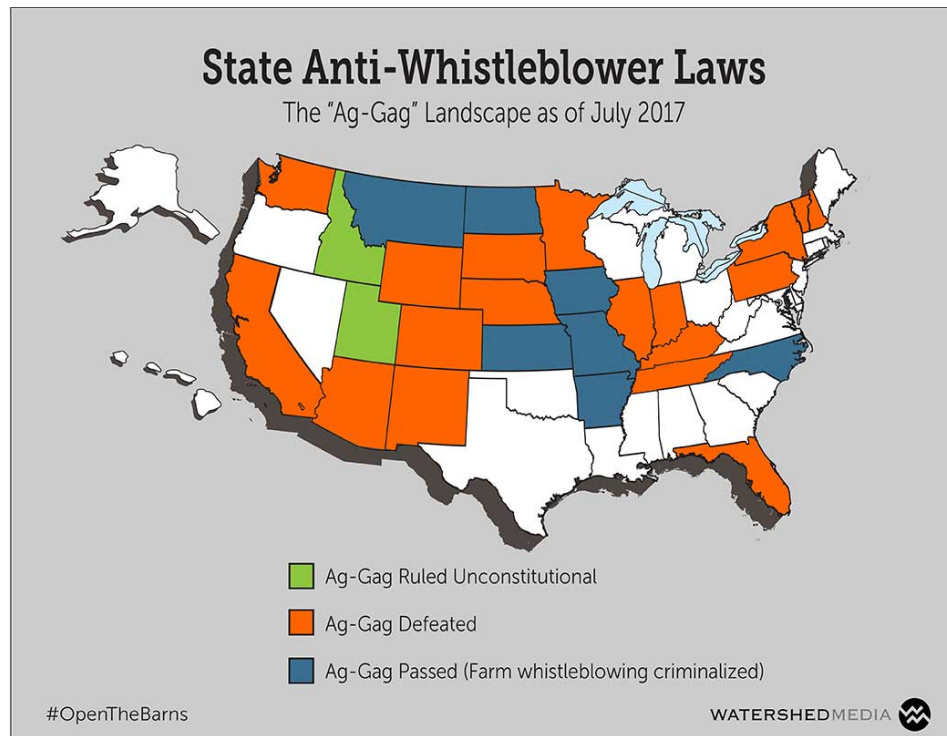


Figure 5. State Anti-Whistleblower Laws as of July 2017

Source: <http://www.lcanimal.org/index.php/campaigns/ag-gag-laws-states-of-disgrace/what-is-ag-gag>

Appendix D

Organic Sales by Product Type, 2008 and 2014

(\$ billions)

	2008	2014	% change 2008 - 2014
Crops	1.9	3.3	69
Livestock and poultry products	0.9	1.5	66
Livestock and poultry	0.3	0.7	108
Total	3.2	5.5	72

Source: USDA NASS, 2014 Organic Survey. 2008 data from 2008 Organic Production Survey.

Figure 6. Organic sales by product type, 2009 and 2014

Source:

https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Organics/2014_Organic_Survey_Highlights.pdf

Appendix E

TABLE 26: NUMBER OF LIVESTOCK SLAUGHTERING ESTABLISHMENTS,
JANUARY 1, 1986-87

STATE	UNDER		OTHER		TOTAL	
	FEDERAL INSPECTION					
	1986	1987	1986	1987	1986	1987
N ENG	52	50	76	70	128	120
N Y	88	89	15	13	103	102
U S	1,544	1,483	3,701	3,523	5,245	5,006

Figure 7. Number of Livestock Slaughtering Establishments in 1986 and 1987

Source: USDA NASS

**Livestock Slaughter Plants, Number by Type of Inspection – States and United States:
January 1, 2016 and 2017**

[Data includes 'Temporarily Closed' plants]

State	Under federal inspection		Other		Total	
	2016	2017	2016	2017	2016	2017
New England ¹	25	26	19	19	44	45
New York	39	39	26	25	65	64
United States	808	814	1,910	1,918	2,718	2,732

¹ New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

Figure 8. Number of Livestock Slaughtering Establishments in 2016 and 2017

Source: USDA NASS

Appendix F

Red Meat Map and Chart

State-by-State* Review of Custom/On-Farm Slaughter Laws

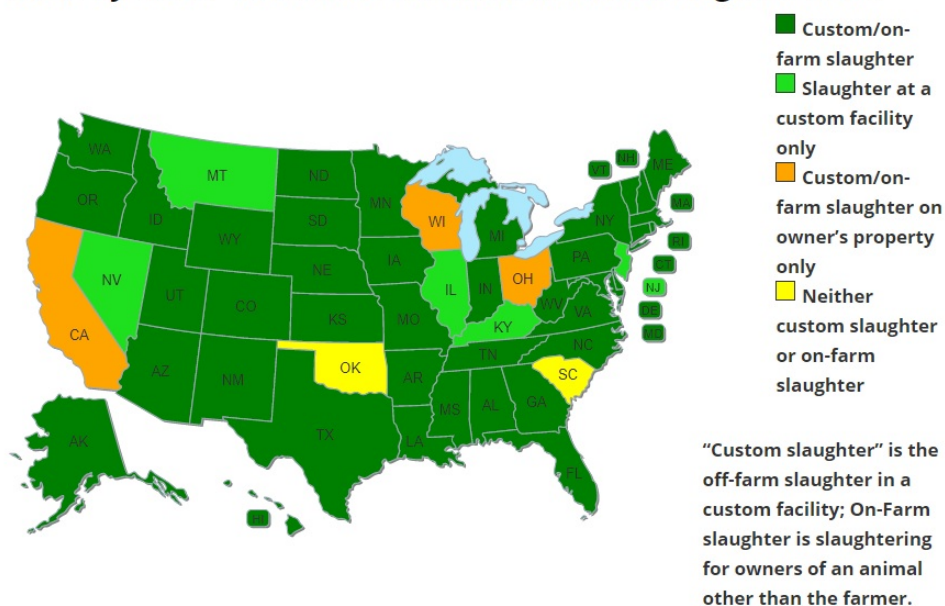


Figure 9. Custom and On-Farm Slaughter Laws

Source: <https://www.farmtoconsumer.org/red-meat-map/>

Poultry Map and Chart

State-by-State* Review of On-Farm Poultry Processing Laws

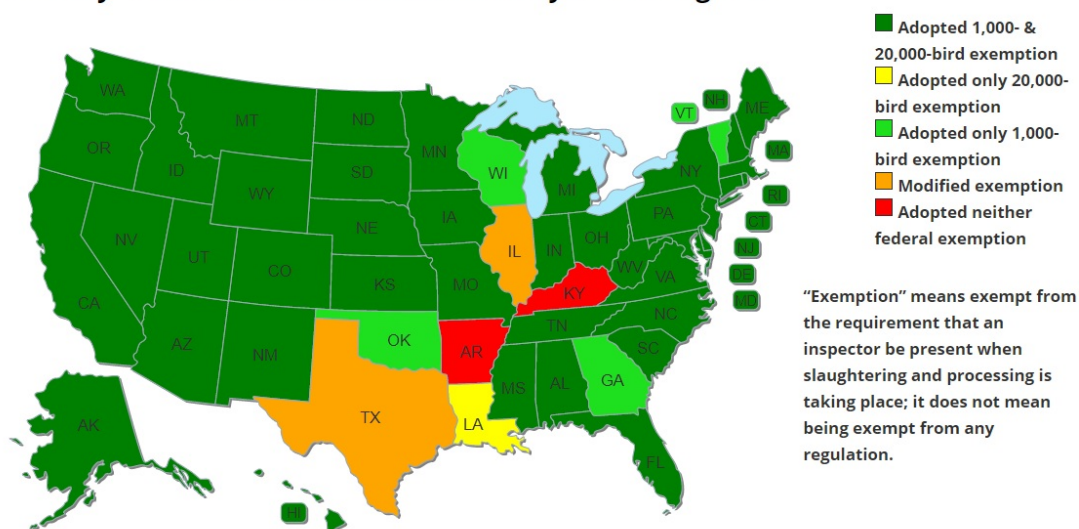


Figure 10. On-Farm Poultry Processing Laws

Source: <https://www.farmtoconsumer.org/poultry-map/>

Raw Milk Nation – Interactive Map

State-by-State* Review of Raw Milk Laws

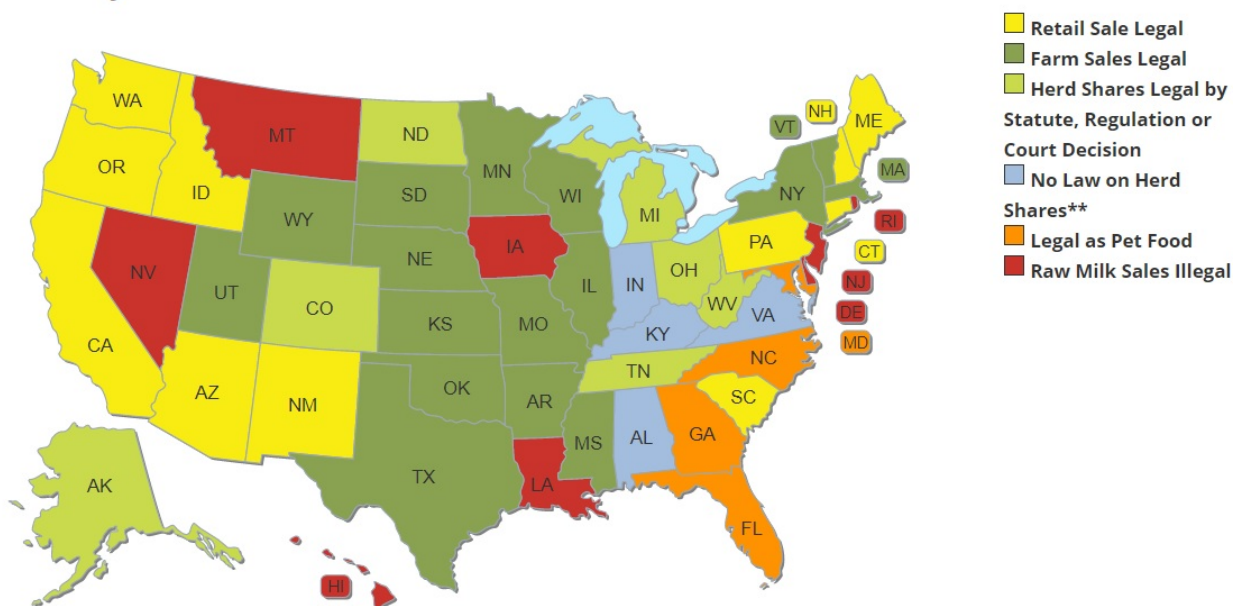


Figure 11. Raw Milk Laws

Source: <https://www.farmtoconsumer.org/raw-milk-nation-interactive-map/>

Appendix G

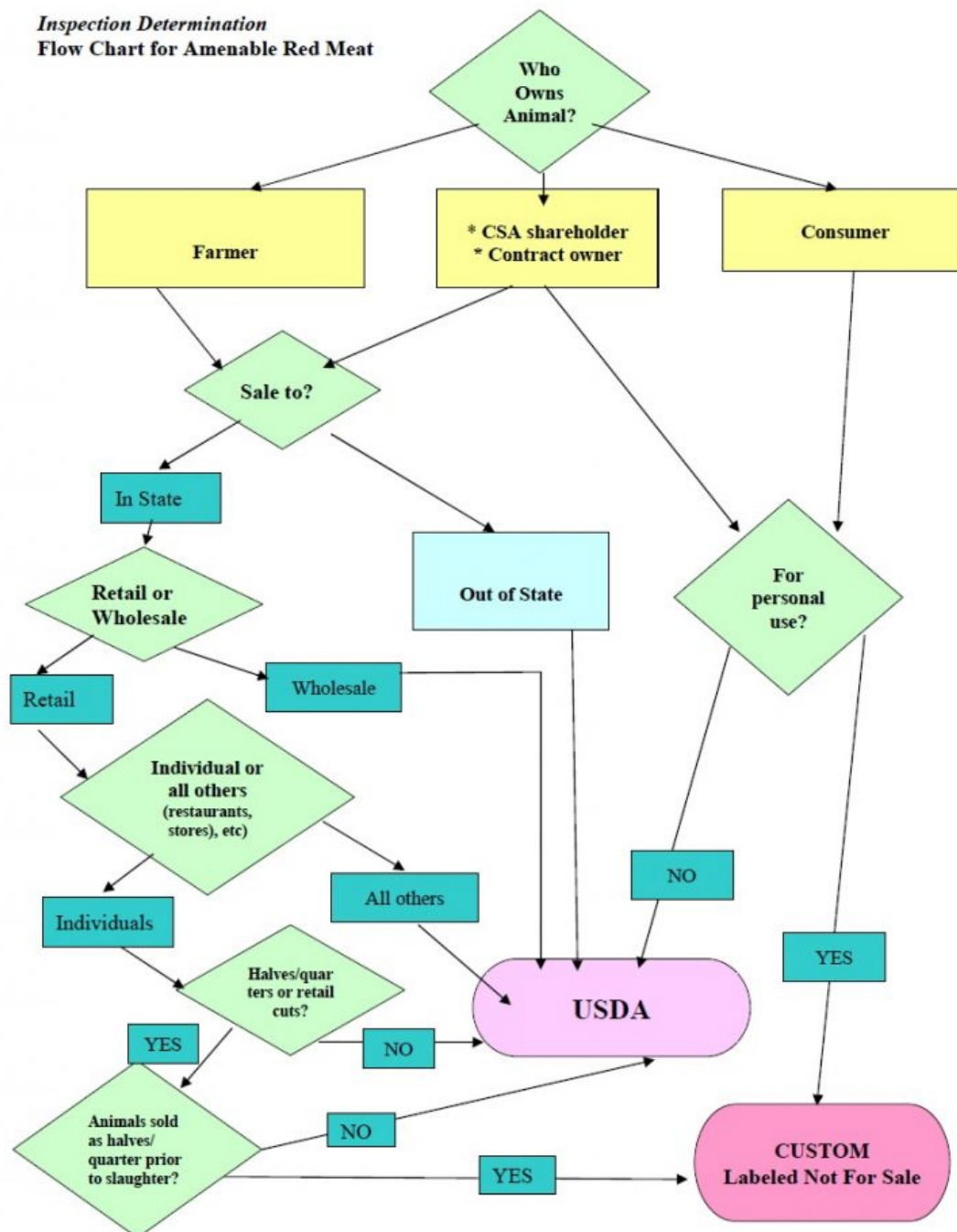


Figure 12. Inspection Flow Chart for Amendable Red Meat

Source: <http://smallfarms.cornell.edu/2012/07/07/slaughtering-cutting-and-processing/>

Appendix H

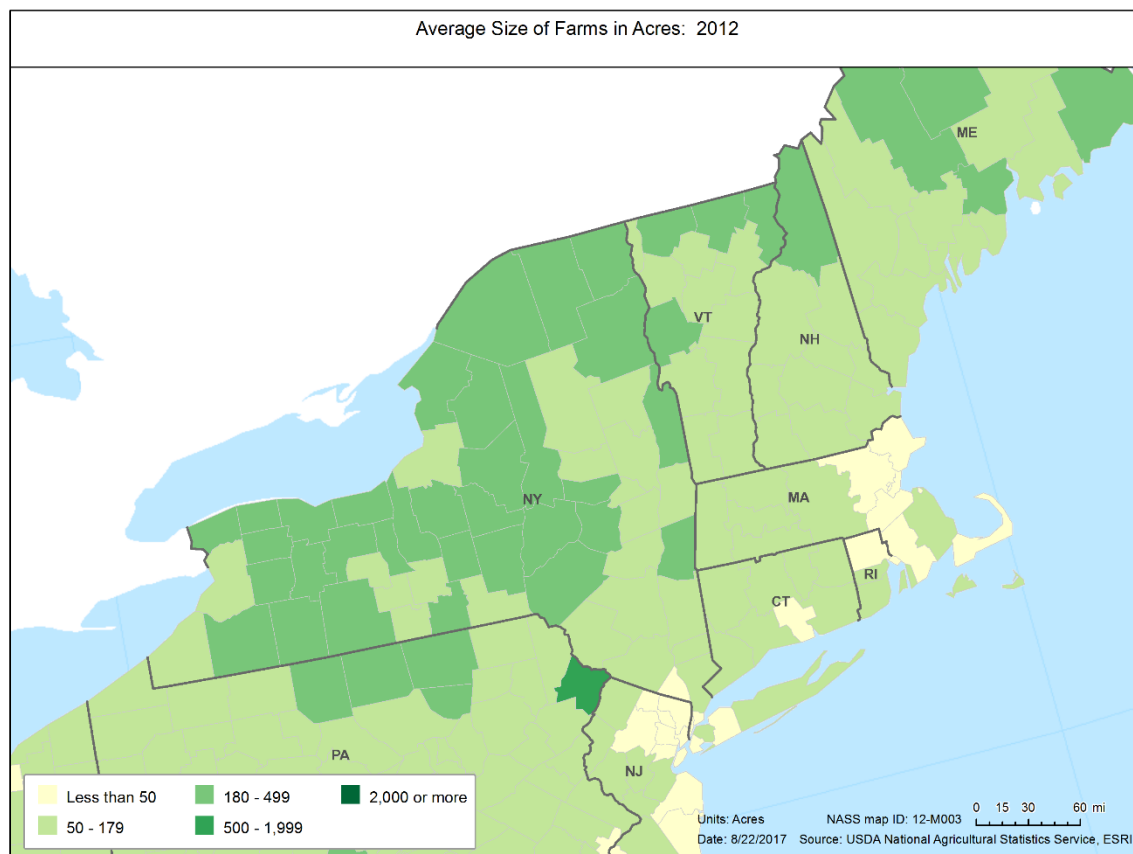


Figure 13. Average Size of Farms in 2012

Source: USDA NASS

Appendix I

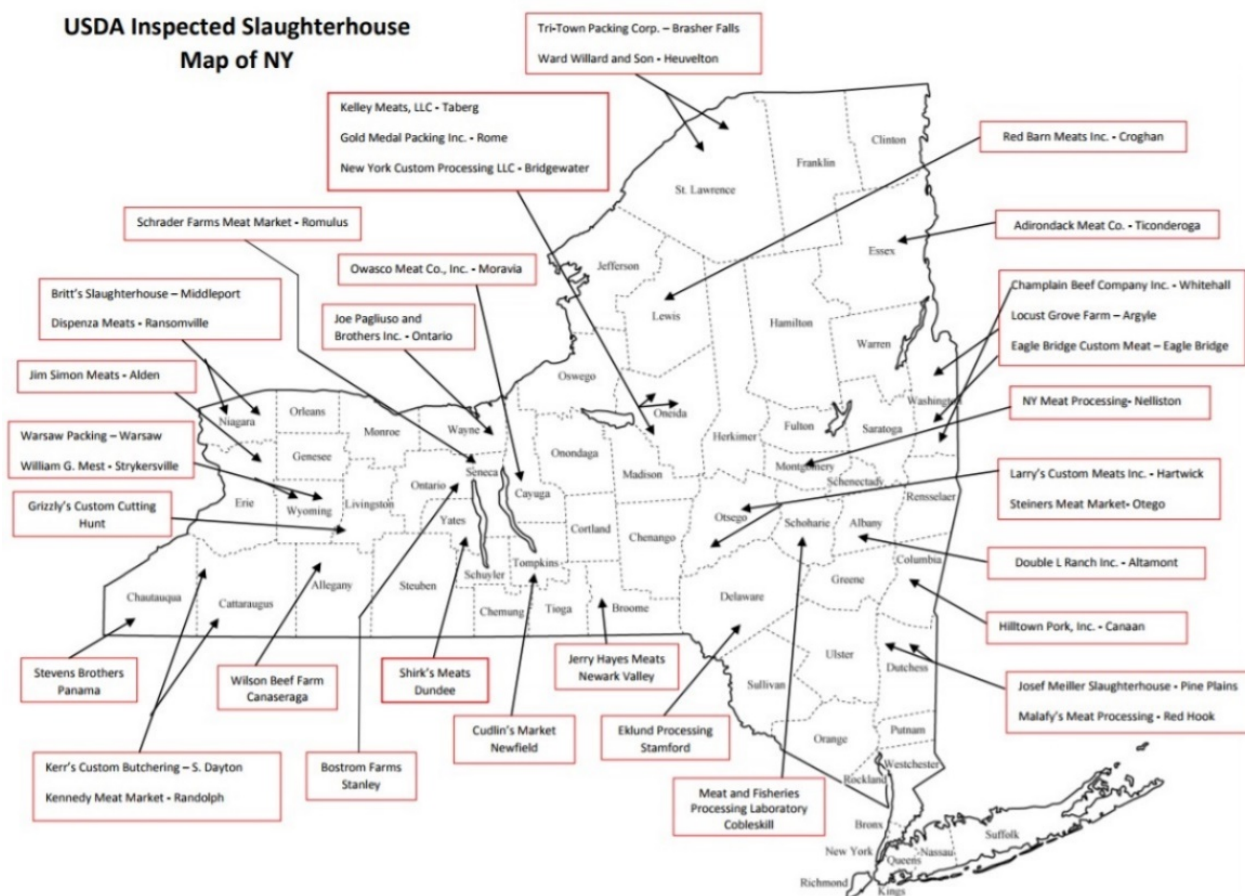


Figure 14. USDA Inspected Slaughterhouses in New York

Source: <http://smallfarms.cornell.edu/resources/livestock/slaughterhouse-map/>

* This does not include custom slaughter houses

Appendix J

Milk Cow Inventory, by Herd Size – New York: 1997, 2002, 2007, 2012 ¹				
Milk Cow Herd Size	1997	2002	2007	2012
	<i>head</i>	<i>head</i>	<i>head</i>	<i>head</i>
1 to 9.....	3,527	2,547	1,978	1,864
10 to 19.....	6,286	3,952	3,753	6,180
20 to 49.....	92,417	61,832	51,117	52,310
50 to 99.....	223,275	194,764	125,720	111,547
100 to 199.....	156,300	132,643	115,904	88,362
200 to 499.....	130,156	121,229	115,229	80,326
500 to 999.....	57,283	88,205	99,086	100,295
1,000 or more.....	30,160	64,831	113,668	169,828
1,000 to 2,499.....	(NA)	(NA)	94,893	129,622
2,500 or more.....	(NA)	(NA)	18,775	40,206
Total.....	699,404	670,003	626,455	610,712

(NA) Not available.

¹ Available from the Census of Agriculture every five years.

Figure 15. Milk Cow Inventory, by Herd Size in NY 1997, 2002, 2007, and 2012

Source:

https://www.nass.usda.gov/Statistics_by_State/New_York/Publications/Annual_Statistical_Bulletin/2015/2014-2015%20NY%20Annual%20Bulletin.pdf

Cattle and Calf Inventory, by Herd Size – New York: 1997, 2002, 2007, 2012 ¹				
Cattle and Calf Herd Size	1997	2002	2007	2012
	<i>head</i>	<i>head</i>	<i>head</i>	<i>head</i>
1 to 9.....	18,394	16,858	14,018	15,219
10 to 19.....	35,653	31,472	28,363	28,808
20 to 49.....	127,827	92,065	87,802	92,723
50 to 99.....	277,255	208,554	162,320	154,098
100 to 199.....	391,986	380,319	261,098	233,403
200 to 499.....	353,376	304,930	297,011	223,673
500 or more.....	275,080	419,167	592,685	671,441
500 to 999.....	147,621	184,581	228,492	158,424
1,000 to 2,499.....	105,246	178,258	235,357	286,514
2,500 to 4,999.....	(D)	35,336	93,132	160,441
5,000 or more.....	(D)	20,992	35,704	66,062
Total.....	1,479,571	1,453,365	1,443,297	1,419,365

(D) Withheld to avoid disclosing data for individual operations.

¹ Available from the Census of Agriculture every five years.

Figure 16. Cattle and Calf Inventory, by Herd Size in NY 1997, 2002, 2007, and 2012

Source:

https://www.nass.usda.gov/Statistics_by_State/New_York/Publications/Annual_Statistical_Bulletin/2015/2014-2015%20NY%20Annual%20Bulletin.pdf

Appendix K



Figure 17 (top left): Inside NYC Live Poultry Market

Figure 18 (top right): Poultry Inside Cages

Figure 19 (bottom left): Lambs and sheep in back pen

Figure 20 (bottom right): Chicken's blood draining as it hangs upside down in a cone

Appendix L:



Figure 21: Barn in Cricket, Creek (Williamstown, MA)



Figure 22: Self-served Farm Store



Figure 23: Cold Meat in Farm Store



Figure 24: Mixed Heritage Pig

Figure 25, 26, 27, and 28: Cows





Appendix M:



Figure 21: Dairy Cows Grazing in Pasture at Corse Farm (Whitingham, VT)



Figure 22: Dairy “Green House” Barn House

Appendix N:



Figure 23: Cows Being Milked in Hill Top Farm (Pownal, VT)

Appendix O:

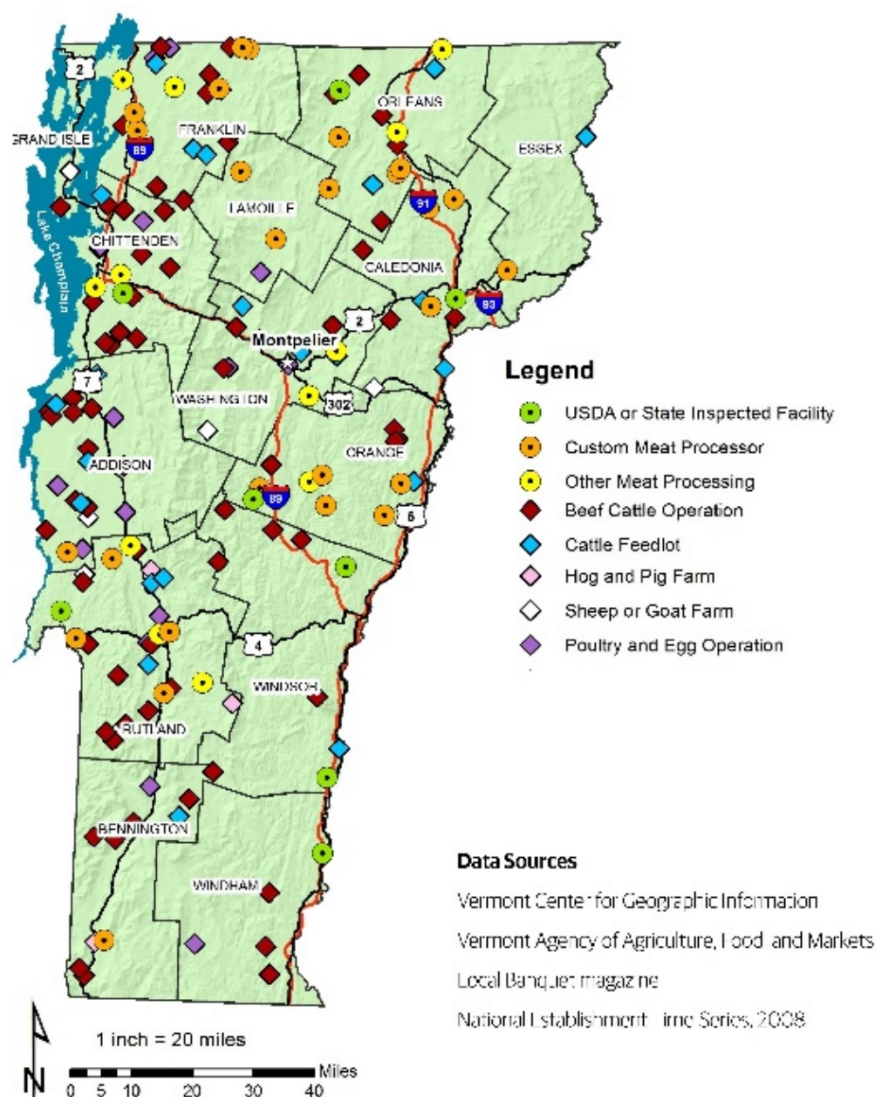


Figure 24: Slaughterhouses in Vermont

Source:

http://www.vtfarmtoplate.com/assets/resources/files/Figure%203.3.9_Animal%20Slaughtering%20and%20Processing%20Facilities%20with%20Production.jpg

Appendix P:

TABLE 1. TOTAL ENVIRONMENTAL CASES LODGED (CIVIL) AND PENALTIES PAID

Administration	Total Number of Cases Lodged	Penalties
Clinton	45	\$25 million
Bush	31	\$30 million
Obama	34	\$36 million
Trump	26	\$12 million

Note: Civil cases lodged from first day in office through July 31 of first year

Figure 25: Total Environmental Cases Lodged Civil and Penalties Paid

Source: <http://www.environmentalintegrity.org/news/penalties-drop-under-trump/>

Bibliography

Animal Welfare Information Center. *United States Department of Agriculture*.

<https://www.nal.usda.gov/awic/federal>

Barnard, Anne. "Meeting, Then Eating, the Goat." *The New York Times*. The New York Times, 24 May 2009.

"Bill H.755: An Act to strengthen the Massachusetts agricultural infrastructure relative to meat and poultry production and processing." The 118th General Court of The Commonwealth of Massachusetts. May 2013. <http://www.malegislature.gov/Bills/188/House/H755>

Bollard, Lewis. "Ag-Gag: The Unconstitutionality of Laws Restricting Undercover Investigations on Farms", 42 *Envtl. L. Rep. News & Analysis* 10960, 10962 (2012)

Brown, David. "UDSA Orders Largest Meat Recall in U.S. History." *Washington Post*, 2008. www.washingtonpost.com/wp-dyn/content/article/2008/02/17/AR2008021701530.html.

Buell, S. (2016). "Massachusetts Passes Question 3, Banning Small Cages for Farm Animals." *Boston Magazine*. Nov 8.

Bunge, Jacob, and Tess Stynes. "Dean Foods Reports Loss Amid High Dairy Prices." *The Wall Street Journal*, Dow Jones & Company, 11 Feb. 2014, www.wsj.com/articles/dean-foods-swings-to-loss-amid-weaker-sales-1392127320.

Carson, R. "Foreword." In R. Harrison, *Animal Machines*, 1964.

Chappel, Bill. "Judge Overturns Utah's Ag-Gag Ban On Undercover Filming At Farms," *NPR*, July 8, 2017. <http://www.npr.org/sections/thetwo-way/2017/07/08/536186914/judge-overturns-utahs-ag-gag-ban-on-undercover-filming-at-farms>

Cook, N. B., Mentink, R. L., Bennett, T. B. & Burgi, K. 2007. The effect of heat stress and lameness on time budgets of lactating dairy cows. *J. Dairy Sci.*, 90, 1674-1682.

EPA 1998. "Environmental impacts of animal feeding operations." *Environmental Protection Agency*, 1998. <http://www.epa.gov/waterscience/guide/feedlots/envimpct.pdf>

- EPA 2001. “Environmental assessment of proposed revisions to the national pollutant discharge elimination system regulation and the effluent guidelines for concentrated animal feeding operations.” *Environmental Protection Agency*, 2001.
http://cfpub.epa.gov/npdes/docs.cfm?view=archivedprog&program_id=7&sort=name
- “Factory Farm Nation: 2015 Edition.” *Food and Water Watch*, 14 Oct. 2015,
<https://www.foodandwaterwatch.org/insight/factory-farm-nation-2015-edition>
- Genoways, T. 2016. “Close to the Bone: The Fight Over Transparency in the Meat Industry.” *New York Times Magazine*, Oct 5. [Link](#)
- Grandin, T. 2007. *Livestock Handling and Transport*, 3rd Edition, 3rd edn. Wallingford, U.K.: CAB International.
- Horrihan, L., Lawrence, R.S., & Walker, P. (2002). How sustainable agriculture can address the environmental and human health harms of industrial agriculture. *Environmental Health Perspectives*, 110(5), 445–456.
- IPCC (2007) *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. [S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press. Cambridge, United Kingdom 996 pp.
- Kaufman, M. (2000). Worries rise over effect of antibiotics in animal feed; Humans seen vulnerable to drug-resistant germs. *Washington Post*, p. A01.
http://www.upc-online.org/000317wpost_animal_feed.html
- Landfried, Jessalee (2013). *Bound & Gagged: Potential First Amendment Challenges to “Ag-Gag” Laws*. *Duke University*.
- Livestock Slaughter 2017 Summary *United States Department of Agriculture, National Agricultural Statistics Service*. April 2017.
<http://usda.mannlib.cornell.edu/usda/current/LiveSlauSu/LiveSlauSu-04-19-2017.pdf>
- Low and Vogel. 2011. *Direct and Intermediated Marketing of Local Foods in the United States*.
 ERR-128, U.S. Department of Agriculture, Economic Research Service. <http://www>.

- ers.usda.gov/Publications/ERR128/ERR128.pdf
- MacDonald, James M., and William D. McBride. “The Transformation of U.S. Livestock Agriculture.” *United States Department of Agriculture*, January 2009.
<http://ageconsearch.umn.edu/bitstream/58311/2/eib43.pdf>
- Martinez, Steve. 2002. Vertical Coordination of Marketing Systems: Lessons from the Poultry, Egg, and Pork Industries. U.S. Department of Agriculture, Economic Research Service. AER-807. May.
- Massey, R. and Ulmer, A. (2008). Agriculture and greenhouse gas emission. University of Missouri Extension. <http://extension.missouri.edu/publications/DisplayPub.aspx?P=G310>
- Mench, J.A., H. James, E.A. Pajor and P.B. Thompson (2008), “The welfare of animals in concentrated feeding operations”. Paper prepared for the National Commission on Industrial Farm Animal Production
- Michigan Department of Environmental Quality (MDEQ) Toxics Steering Group (TSG). (2006). Concentrated animal feedlot operations (CAFOs) chemicals associated with air emissions. [http://www.michigan.gov/documents/CAFOs Chemicals_Associated_with_Air_Emissions_5-10-06_158862_7.pdf](http://www.michigan.gov/documents/CAFOs_Chemicals_Associated_with_Air_Emissions_5-10-06_158862_7.pdf)
- Mirabelli, Maria C., et al. “Race, Poverty, and Potential Exposure of Middle-School Students to Air Emissions from Confined Swine Feeding Operations.” *Environmental Health Perspectives*, vol. 114, no. 4, 2006, pp. 591–596. JSTOR, www.jstor.org/stable/3650943.
- “National Organic Program (NOP); Organic Livestock and Poultry Practices.” *Federal Register*, 10 May 2017, www.federalregister.gov/documents/2017/05/10/2017-09409/national-organic-program-nop-organic-livestock-and-poultry-practices. Accessed 19 Aug. 2017.
- New York (State). Legislature. Assembly. *An act to amend chapter 395 of the laws of 2008, amending the agriculture and markets law relating to licensing of establishments where animals or fowls are slaughtered...* A10170 (S07345). 2016-2020 Reg. Sess. (May 24, 2016). *New York State Assembly*.
- Pachirat, T. 2011. *Every Twelve Seconds*. Yale University Press

- Pew. "Putting meat on the table: Industrial farm animal production in America." *Pew Commission on Industrial Animal Farm Production*, 2009.
http://www.ncifap.org/_images/PCIFAPFin.pdf
- Pollan, Michael. "The Food Movement, Rising," *New York Times Review of Books*, June 10, 2010. <http://www.nybooks.com/articles/2010/06/10/food-movement-rising/>.
- Potts, A. 2012. "Meat Chicks and Egg Machines." *Chicken*. (139-173)
- Purvis, A. 1998. An Industrializing Animal Agriculture: Challenges and Opportunities Associated with Clustering. In *Privatization of Information and Agricultural Industrialization*, S.A. Wolf, ed. New York, CRC Press, pp 117-149
- Richey, W. (2015). "Ag-gag laws head to court: So far, animal rights activists are winning" *Christian Science Monitor*, December 31.
- Shanker, Deena. 2017. "There Aren't Enough Slaughterhouses to Support the Farm-to-Table Economy." *Bloomberg Pursuits*.
- Shea, Matthew. "Punishing Animal Rights Activists for Animal Abuse: Rapid Reporting and the New Wave of Ag-Gag Laws", 48 *Colum. J.L. & Soc. Probs.* 337, 338 (2015)
- Shields, Sara, and Michael Greger. "Animal Welfare and Food Safety Aspects of Confining Broiler Chickens to Cages." *Animals : an Open Access Journal from MDPI* 3.2 (2013): 386–400. PMC. Web. 19 Aug. 2017
- Sigurdarson, S.T. & Kline, J.N. (2006). School proximity to concentrated animal feeding operations and prevalence of asthma in students. *Chest*, 129, 1486–1491.
<http://chestjournal.chestpubs.org/content/129/6/1486.full.pdf>
- Striffler, S. 2005. *Chicken: The Dangerous Transformation of America's Favorite Food*. Yale University Press (53-90).
- Spellman, F.R. & Whiting, N.E. Environmental management of concentrated animal feeding operations (CAFOs). *Boca Raton, FL: CRC Press*, 2007.

The Downed Animal Protection Act; Humane Methods of Poultry Slaughter Act; the Meat and Poultry Products Inspection Amendments of 1993: hearing before the Subcommittee on Livestock of the Committee on Agriculture, House of Representatives, One Hundred Third Congress, second session, on H.R. 559, H.R. 649, H.R. 3646, September 28, 1994"

“Treat My Chicken Right: ASPCA Survey Shows Consumers Want More Humanely Raised Chicken, Feel it Leads to Safer Chicken Products” (press release), *ASPCA*, Sept. 2, 2014.

"Treatment of Live Poultry before Slaughter." *Federal Register*. N.p., 28 Sept. 2005.

USDA (U.S. Department of Agriculture). 1984. A Review of the Slaughter Regulations under the Poultry Products Inspection Act. Regulations Office, Policy and Program Planning, Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, D.C. 28 pp.

Wabeck, C. 2002. Quality assurance and food safety - chicken meat. In: *Commercial Chicken Meat and Egg Production* (Ed. by Bell, D. D. & Weaver, W. D.), pp. 871-887. Dordrecht, The Netherlands: Kluwer.

Wald, Matthew L Meat Packer Admits Slaughter of Sick Cows. *New York Times*, Mar. 13, 2008), <http://www.nytimes.com/2008/03/13/business/13meat.html>.

White House’s Fiscal 2018 Budget

whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/2018_blueprint.pdf

Woodhouse, Leighton A.” Charged with the Crime of Filming a Slaughterhouse”. *The Nation*, 2013. <http://www.thenation.com/article/charged-crime-filming-slaughterhouse/>