

Report on the Feasibility of a Small-scale Small-animal Slaughter Facility for Independent Meat Producers in North Carolina

**Prepared for the
North Carolina Department of Agriculture
& Consumer Services**



**By
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Executive Summary

In November 2005, the North Carolina Golden LEAF Foundation awarded a grant to the North Carolina Department of Agriculture & Consumer Services (NCDA&CS) for the purpose of conducting a study on the feasibility of establishing small-scale slaughter facilities in the state to meet the needs of independent small-animal (poultry and rabbit) meat producers. In April 2006, NCDA&CS contracted with the researcher to conduct the primary duties of such a study, including the following key deliverables:

- Conduct secondary research on similar projects
- Conduct a statewide survey to measure demand for such a facility
- Determine a geographical area of the state with greatest need for a facility
- Conduct interviews and focus groups with prospective facility users
- Measure and assess market demand for local poultry
- Recommend possible site locations for a facility
- Review regulatory guidelines applicable to such a facility
- Propose a facility design and suggested equipment, along with cost estimates
- Review and recommend legal and managerial options for a project serving independent small-animal meat growers in the targeted region

Despite being the fourth-largest poultry producing state in the country, North Carolina has only two inspected slaughter facilities serving independent small-scale small-animal growers: one in Pittsboro and one in Bladenboro. Nationally, examples of successful small-animal slaughter facilities were found in both the cooperative and for-profit arenas. Also found was a model whereby a state university owned and operated a small facility.

Researchers conducted a statewide written survey of farm-based producers to determine the level of existing and potential demand for such a facility, the geographical area where unmet demand is the greatest, demographic characteristics of potential users and the potential economic impact of a facility.

Analysis of 60 survey responses reveals the existence of small, diversified farms throughout the state with a strong interest in increasing production through use of an inspected slaughter and processing facility. These growers are currently producing very small volumes of small meat animals, ranging from chickens and turkeys to rabbits and such niche poultry as quail and ducks. The majority of these producers are selling processed meat from their farms directly to consumers, with a substantial number expressing interest in larger-volume wholesale trade to restaurants and grocery retailers. Many growers expressed reservations about divulging their production volumes due to a lack of understanding of state regulations regarding on-farm slaughter and sale of poultry.

By most every measure, the western region of the state has the greatest unmet demand for access to a USDA- or state-inspected small-animal slaughter facility. Subsequent research on producer demographics, site selection and facility planning was therefore conducted for determining the feasibility of establishing a small-animal processing facility in Western North Carolina.

Researchers found that in Western North Carolina, many growers are in need of access to an inspected slaughter facility in order to increase and professionalize their production and marketing systems. These producers are currently unable to expand their businesses due to legal restrictions for growers not using state- or federally-inspected processing facilities. State law only allows up to 1,000 chickens or 250 turkeys to be processed and sold straight from a farm annually.

WNC growers are spread over a wide geographical area and are producing a variety of poultry and rabbit products. The majority of respondents in the region are directly marketing their meat to consumers, while a substantial number also report marketing to restaurants. Among 30 respondents, 23 reported being in business now, while seven reported they had not yet started their meat businesses.

The establishment of slaughter and processing services for small meat animals in the region would likely substantially increase production among growers. Using only data supplied by existing small-animal producers, research estimates an annual potential of 33,205 head of small animals processed at an inspected facility in Western North Carolina in its earliest stages of operation, with a retail value estimated at \$377,000 a year. This represents a five-fold increase over current recorded production volumes.

Key criteria for selecting potential facility sites include locations with adequate infrastructure to meet production and regulatory requirements, reasonable proximity to farm-based producers who wish to access the facility and community receptivity toward hosting a slaughter facility. Research indicates that the optimal site location would be in the western foothills, between Buncombe County to the west, Iredell County to the east, Ashe County to the north and Cleveland County to the south.

Options relating to site selection for a small-animal slaughter facility in Western North Carolina are limited by a lack of interest in expansion of existing large-animal facilities to process poultry and rabbits and a lack of private equity investment for project development. These factors, along with a measured lack of technical training and education available to producers, strongly suggest that a facility of this nature should be managed as a nonprofit entity focused on training and education for producers, in addition to providing the service of processing animals for meat.

Based on a review of possible site locations – and considering preferable management and organization issues – researchers recommend a site in Marion as the most viable of available choices. A second location, at the Mountain Horticultural Crops Research Station, located in Fletcher in south Buncombe County, is deemed potentially viable but is not considered an optimal site.

Analysis was conducted to estimate the market potential for locally grown small-animal meats. Supporting demand potential are findings that direct sales from farmers increased 20 percent between the 1997 and 2002 agricultural censuses and the number of farmers tailgate markets in the region now stands at more than three dozen. Market research provides further evidence that consumers and businesses in the region care about where their food comes from and how it's grown.

Direct sales to consumers hold the greatest potential for locally produced rabbit and poultry meat. Expanded direct sales also allow for a good match between supply and

demand for locally raised poultry and rabbit meat in WNC. Good infrastructure exists within at least part of the region for these types of sales, given the extensive network of farmers tailgate markets and the growing network of Community Supported Agriculture programs. Additional infrastructure needs for selling within the current system include refrigerated transportation and storage. Among larger markets, the restaurant sector likely holds the greatest potential for producers, given higher potential margins and the interest by many restaurants in offering local poultry and rabbit instead of, rather than in addition to, poultry and rabbit meat from other sources.

Design considerations for a suitable small-scale small-animal processing facility must take into account producer demand, projections for future production and market growth and the limited resources that can be expected for the project's development.

Based on measured levels of producer demand and potential availability of funding, researchers recommend development of a pilot plant for slaughter and processing of multiple species of poultry and rabbits. A recommendation is for a facility design with a maximum daily throughput of not more than 1,000 chickens a day, and that can be efficiently operated with a minimal number of workers. The design should be scalable to allow for future expansion and to meet regulatory requirements for every level of inspection, beginning with state inspection under the NCDA&CS Meat and Poultry Inspection Division.

Researchers estimate basic construction costs for a small facility in Marion, including site preparation and utility tie-ins, at \$450,000. Basic costs of acquiring and installing processing equipment are approximately \$100,000, bringing total physical infrastructure development costs to an estimated \$550,000. Project management costs exceeding revenues from processing fees are estimated at \$200,000 over a five-year period.

Options for forms of legal organization include an agricultural cooperative, business corporation, nonprofit corporation, limited liability company, a hybrid of these or a hybrid government/corporate entity. In the likely event that a tax-exempt organizational form is developed, the Internal Revenue Service definitions of "charitable" or "social welfare" activities should be considered in formulating the mission and methods of the enterprise. Other federal laws such as the Packers and Stockyards Act touch upon the facility's operations.

Attaining proper management of this project will benefit from a two-pronged approach: Accessing the resources of existing large support organizations and utilizing the advantages of social entrepreneurship. A nonprofit management entity should operate under the guidelines and principles of what has commonly become known as social entrepreneurship. While social enterprises are relentlessly bottom-line oriented, they often pursue what is called "the triple bottom line." In practical terms, triple bottom line accounting means expanding the traditional company reporting framework to take into account environmental and social performance in addition to financial performance.

The project is recommended to charge processing fees similar to those found at other facilities in the country catering to independent growers. Using the production figures of 33,205 animals a year in its first phase of operations, project leaders can anticipate annual processing revenues of approximately \$80,000.

One management option could be to give control of facility operations to an NGO, while physical ownership belongs to the state or a local government. This model has similarities to existing relationships at Millennial campuses between the university system and private businesses. Another variation on the two-pronged approach is to have the facility land and physical infrastructure controlled by an NGO with a board of directors comprised of state and local service providers and farmers.

Should the development of this project move forward, research indicates that project leaders should pursue the following set of outcomes:

- A facility is established that allows producers to have small volumes of a variety of poultry and rabbit products of their own raising processed and inspected.
- Producers receive formal training for safe and wholesome commercial growing, processing and marketing of meat products that are state or federally inspected.
- Producers are able to understand and meet all regulatory issues affecting their businesses.
- Producers have a variety of options for marketing inspected meat, including direct marketing, wholesale distribution and participation in associations or other business entities for marketing and sales.
- Small-volume producers are able to expand production and professionalize their businesses.

Given that services provided should include the training and education of producers, this project should be developed as a public service effort. A partnership of service providers should be formally established to provide guidance to the project and to develop programs and policies that will ensure success. To succeed, the project must closely engage all available services to the agricultural sector in the state. Recommended project participants include agencies within the NCDA&CS, the NCSU College of Agriculture and Life Sciences, the McDowell Economic Development Association, agencies of local government, and a farm-based producer group. A logical selection as lead fiscal agency for the project is the North Carolina Agricultural Foundation, Inc., a 501(c)3 nonprofit organization with strong experience in grants management for agricultural development projects.

Working in close cooperation with representatives from participant organizations, a nongovernmental organization (NGO) should manage daily operations of the facility and legally provide the service of small-animal processing. A highly capable general manager should be hired to manage the processing facility and its services. This individual should have proper training and certification in meat handling and processing of small-animals and should be given broad discretionary powers on day-to-day management. In its earliest stages, and until project income can justify the costs of staff labor, the project will most likely need to rely on labor supplied by participating farms.

To ensure achievement of the proposed outcomes stated above, resources in the existing agricultural support structure must participate in developing programs geared toward professionalizing the independent poultry and rabbit industry, including comprehensive training from hatchery to the consumer.

Section One: Introduction

I. Background

In November 2005, the North Carolina Golden LEAF Foundation awarded a \$50,000 grant to the North Carolina Department of Agriculture & Consumer Services (NCDA&CS) to fund a study to determine the feasibility of developing a small-scale inspected slaughter facility for poultry and rabbit-meat production. The impetus for the original grant request came from increased calls to the NCDA&CS from consumers seeking locally produced, all-natural poultry and rabbit meat, as well as a belief among NCDA&CS marketing personnel that current slaughter capacity is insufficient to keep up with consumer demand for these products. Repeated conversations and meetings with small-scale independent poultry and rabbit producers in the state led NCDA&CS personnel to believe a study was warranted.

In April 2006, NCDA&CS entered into a contract with Smithson Mills to lead the feasibility study over a nine-month period, with a final report on findings to be submitted by December 31, 2006. The terms of the grant-funded period and the length of the contract were subsequently extended into early 2007. As lead researcher for this project, Mills worked closely with NCDA&CS personnel in the Divisions of Marketing, Property and Construction and Meat and Poultry Inspection. Additional research services were provided by individuals and organizations deeply involved in agricultural economic development activities both in the state and nationwide.

II. Scope of services

NCDA&CS contracted with the researcher to provide the following scope of services:

- Conduct secondary research on existing projects similar in nature to a “Small-Scale Shared Use Slaughter Facility,” highlighting best practices in management and organizational structure.
- Conduct a statewide survey of existing and potential demand for a small-scale small-animal slaughter facility serving independent livestock producers.
- Retrieve, enter, clean and analyze survey results, determining a geographical area that has the highest demand and need for a small-scale, small-animal slaughter facility.
- Conduct interviews, surveys and focus-group meetings with prospective users of a small-scale small-animal slaughter facility in the targeted geographical area to determine detailed use projections, specific equipment and services needed by facility users and physical attributes desired for such a facility.
- Interview and survey market operators in or near the designated targeted geographical area for the distribution and sale of products processed at a small-scale small-animal slaughtering facility.
- Review sites in the target geographical area to identify host locations that may have the greatest potential for hosting a small-scale small-animal slaughtering facility. Particular focus is to be given to NCDA&CS research stations within the defined geographical area, with additional research into existing USDA-

approved commercial operations or other sites that may have the necessary physical infrastructure to host such a facility.

- Review and report on existing regulatory guidelines for building and operating small-animal processing facilities, coordinating this activity with state and federal regulatory officials.
- Work with experts in the management and implementation of small-scale small-animal slaughtering facilities, in close cooperation with NCDA&CS engineers, to develop a viable proposed facility layout and design, a suggested equipment acquisition list and an estimate of costs associated with project implementation.
- Review various options for legal organization and operational management of a small-scale small-animal slaughtering facility, including establishment as a state-owned facility, as a nonprofit project, as an agricultural membership cooperative or as a for-profit entity, and make recommendations for legal establishment that appear most viable for long-term success.
- Include all data gathered and analyzed in a final report.

III. Report layout

This report generally follows the sequence of the scope of services as listed above.

Section Two examines existing facilities and projects that provide examples of best practices for serving the needs of small-scale small-animal livestock producers. Specific examples discussed include two facilities in North Carolina and out-of-state efforts in Michigan, Virginia, Kentucky and Washington. Other processors targeting high-end niche poultry markets, as well as existing large-animal processors who are contemplating entry into small-animal meat processing, are also discussed.

Section Three reports on results of a statewide survey of independent poultry and rabbit producers, with discussions of types of production and needs for processing and other support. This section identifies the Western North Carolina region as having the greatest unmet demand for small-animal processing facilities serving independent growers.

Section Four profiles Western North Carolina small-animal meat producers. Data is gathered from survey results, two grower meetings held in Marion and Shelby and individual interviews.

Section Five focuses on site selection and development options for a small-scale small-animal slaughter facility in Western North Carolina. Four general development options are discussed: expansion of an existing large-animal processing facility to meet small-animal producer needs, development of a small-animal facility using private equity investment, development of a pilot facility on a state-owned agricultural research station and development of a pilot facility managed by a local government or nonprofit entity.

Section Six assesses the market potential for locally produced poultry and rabbit meat in Western North Carolina. Using research data gathered by staff at the Appalachian Sustainable Agriculture Project, this section documents rising demand from consumers for locally grown foods, including poultry meat.

Section Seven discusses building design options and construction specifications for a small-scale small-animal processing facility. In close consultation with regulatory officials and agricultural engineers at NCDA&CS, the researcher provides layouts and specifications that recognize the realities of measured demand, regulatory requirements, and potential levels of project funding.

Section Eight details equipment design issues for a small-scale small-animal processing facility. Based on measured levels of producer demand and potential availability of funding, this section summarizes research into different types of equipment necessary for partially automated processing at speeds of fewer than 200 birds an hour.

Section Nine addresses legal entity considerations for a small-scale small-animal slaughter facility, with particular emphasis on dual-entity nonprofit models that fall under the new category of social entrepreneurship.

Section Ten discusses the most critical regulatory elements of proper plant management, including state and federal regulations on handling of meat products, sanitary processing and inspection and environmental regulations affecting proper disposal of waste.

Section Eleven researches facility and program management options based on a consideration of desired outcomes for the overall project. Particular emphasis is given to developing a partnership of service providers to provide guidance to the project and to develop programs and policies that will ensure success.

Section Twelve provides recommendations on the next steps to be taken toward establishing this facility, including steps towards establishment of a lead managing entity and the process of establishing partnerships between state agencies, research institutions, local leaders and farm-based producers.

The appendices of this report include primary-research survey instruments and results, including the statewide survey instrument and notes from growers meetings in Marion and Shelby. Secondary data includes the report “Small-Scale Poultry Processing,” by Anne Fanatico of the National Center for Applied Technology, reproduced in its entirety with the author’s permission. Regulatory documents include an application form for state meat inspection, “Coming Under Inspection for Small Processing Plants,” prepared by the NCDA&CS Meat and Poultry Inspection Division, and The North Carolina Poultry Products Inspection Law

Section Two: Secondary Research on Existing Small-scale Small-animal Slaughter Facilities Serving Independent Meat Producers

I. Introduction

Research was conducted on existing slaughter facilities in North Carolina and on small-animal slaughter facilities in other states that are serving independent meat producers. The out-of-state research was conducted through the Internet and by contacting offices of agricultural colleges and cooperative extension departments for several state universities, including Minnesota, Kentucky, Arkansas, Pennsylvania, Washington and Virginia. Certain nonprofit organizations, cooperatives and for-profit companies also were contacted for information.

Small, independent slaughter facilities owned and operated by either associations or cooperatives were difficult to find in many states. Large-scale, corporate facilities were much easier to find. Most states have – or are adjacent to states that have – facilities operated by vertically integrated corporations slaughtering several tens of millions of birds a year.

II. North Carolina projects

Research was conducted on existing or planned slaughter facilities in the state that potentially could serve the needs of independent small-animal producers or of farmer-owned producer organizations. Existing and potential facilities were identified through the USDA's Food Safety Inspection Service website, interviews with North Carolina Department of Agriculture and Consumer Services (NCDA&CS) officials and informal conversations with farm-based meat producers.

Despite being the fourth-largest poultry producing state, North Carolina has very few slaughter-facility operators who will consider serving independent small-scale poultry and rabbit growers. At the time of this writing, only two USDA-inspected facilities are providing such services, as discussed below.

Sueno LLC (JBF Processing)

2305 Jay Shambley Rd.

Pittsboro, NC 27312

(919) 742-6584 (phone and fax)

Contact: Joe and Steve Moize

Plant Number: P20538 M20538 (Re-licensed September 2006)

Sueno LLC is the legal name of the company doing business as JBF Processing. This plant was established in 1998 and was initially operated by Andy Youngblood as Rose Hill Poultry Processing. For many years, this was the only USDA-inspected plant in the state serving independent poultry growers.

Rose Hill Poultry Processing was built on the property of Youngblood's Rose Hill Farm, located a few miles west of Pittsboro off U.S. 64. The existence of a facility in the region spurred further development of independent commercial poultry production, largely serving the consumer markets in Chapel Hill and throughout the central Piedmont region. In 2000, Rose Hill began collaborative operations with a pet food company, Nu

Dimensions LLC, which manufactured premium pet food at the site and later moved into a new manufacturing facility next door to the processing building.



JBF Processing, Pittsboro, NC

The plant is in the central part of the state, about 30 miles west of Raleigh. It's a largely manual facility, equipped to slaughter all poultry (turkeys or smaller) and rabbits. The plant has a production capacity of 500 broilers a day, with the ability to also provide deboning and cut up. The total floor space of the plant is approximately 2,000 square feet.

In November 2005, the plant was sold to Sueno LLC, which is owned by Joe Moize. As a grower of free-range chickens and turkeys, Moize had been a customer at Youngblood's plant. Approximately 12 to 15 growers had been using the plant on a regular basis. In 2005, according to Moize, he suggested to growers that they form a regional production cooperative that could use the plant for its processing needs. Shortly after buying the main processing plant, Moize also acquired the pet food company.

According to an article published in January 2006 in the Chatham County Cooperative Extension newsletter by Peregrine Farm co-owner Alex Hitt, the cooperative Growers Choice was established with 10 member farms and substantial support from Weaver Street Market, the largest retail food cooperative in the state, which had a keen interest in sourcing locally produced poultry. Sueno LLC leased the plant to Grower's Choice, giving the producer cooperative managerial control over the plant's day-to-day operations.

The plant was plagued with equipment breakdowns and regulatory violations. Located on a rural farm, the facility has no access to water and sewer facilities and no access to three-phase electricity, which is required for many advanced pieces of processing equipment. Several sanitary inspections of carcasses failed, and the plant was cited for several violations.

Grower's Choice struggled financially to process the quantity of birds necessary to break even on an ongoing basis while paying for rent, labor and a plant manager.



Evisceration line and USDA inspector, JBF Processing

According to several individuals involved in the plant's operation, Moize and the producer cooperative had discussed transferring ownership of the facility to Grower's Choice through a purchase. Moize reports that he had given the growers until October 15, 2006 to buy the plant. However, in mid-August discussions broke down, and Grower's Choice vacated the premises.

As of October 2006, Moize reports that the facility is open for custom slaughter services and there is no minimum run for farmers wishing to have their animals processed.

According to Moize, custom processing fees are as follows:

- Slaughter and bagging whole chickens: \$2.50 per bird
- Slaughter, deboning and cut up: \$3.10 cents per bird
- Ducks: \$4 per bird (waxing: \$1 extra)
- Geese: \$5 per bird (waxing: \$1 extra)
- Quail: \$2.50 per bird
- Pheasants: \$4 per bird
- Rabbits: \$3 per head; cut up: \$3.80 per head
- Turkeys: \$5 per bird



Feather plucker, JBF Processing

Moize reports that since he took over daily operations, the plant has improved its physical infrastructure and increased washing and dipping stations to maintain carcass cleanliness.

Moize says that to gain long-term viability, participating farmers must increase their production. The various physical infrastructure problems have led him to investigate relocating the plant. He has now established a hatchery in Mount Pleasant near Concord, and is considering the establishment of a new processing plant there in 2007. Moize reports that he's considering a move into more contractual growing to maintain quality control and also diversifying contract growing into multiple bird types, including pheasant, quail and heirloom poultry.

Lessons Learned

- **Access to processing spurs on-farm production.**
Andy Youngblood's opening of the plant to custom slaughter was a catalyst for increased independent poultry production in the central North Carolina region.
- **Diversified markets are important.**
The plant was viable for a time largely because of the pet food company that was associated with it, providing a market for meat products and offal that the human consumer market couldn't handle.
- **Proper infrastructure is critical.**
Although a USDA-inspected facility, the plant lacks sewer and three-phase electrical service. Unless critical infrastructure problems can be resolved, the plant may lose its USDA designation.
- **Organization is key.**
While all parties involved wanted Grower's Choice to succeed as a producer

cooperative – believing the facility could then be more fully utilized – organizational issues weren't properly resolved.

- **Sanitary production, from farm to plant, is critical.**

Failure of several sanitary inspections damaged the reputation of the facility. Perceived sanitary problems, whether real or imagined, can impact the ability to attract farm-based producers and sales.

Farmer's Fresh

475 Industrial Dr.

Bladenboro, NC 28320

(910) 648-2738

Contact: James Hunt

Plant Number: P31895

Farmer's Fresh Poultry established its plant in Bladenboro and opened for business in the summer of 2006, processing for the high-end and all-natural poultry markets. The company looked at potential locations in several states before selecting an existing building in Bladenboro. The Bladenboro Industrial Park, in which the facility is located, is a certified industrial site. The Bladen County Economic Development Commission certified the site with funding assistance from North Carolina's Southeast, a regional economic development partnership.

According to newspaper reports in early 2006, Farmer's Fresh renovated an 8,500-square-foot building in the industrial park that was formerly used for goat meat processing. The company has invested more than \$250,000 in equipment for its processing operations. The facility sourced most of its equipment from Colombia after having difficulty finding more readily available equipment for a mid-sized plant. According to manager James Hunt, the availability of specialized equipment for smaller-scale poultry processing is considerably limited due to the concentration of American poultry production into large vertically integrated corporate systems.

The plant's management team intends to have a processing capacity of 25,000 birds a week. Equipment is semi-automated and can hand-slaughter for halal markets. It's one of the largest plants encountered in this research that still provides hand-evisceration.

The company is initially hiring approximately 14 people to run the facility. According to Hunt, Bladen County was an optimal location because of the strong agricultural industry present in the community and because of assistance from economic developers from within the county, NCDA&CS and North Carolina's Southeast.

Hunt reports that Farmer's Fresh is open to custom slaughter services for independent growers, with a basic processing fee of \$1.10 to \$1.25 for whole-bird processing. The minimum run for custom slaughter is 350 birds. The plant doesn't provide turkey or rabbit processing at this time but could process turkeys with an investment in larger killing cones.



Farmer's Fresh, Bladenboro, NC

Recent reports indicate that Farmer's Fresh is in discussions with several farms and farmers' groups about providing custom slaughter services. Because the plant is so new, very little can be determined about its future state of operations or business model.

Lessons Learned

- **Utilize support services.**
Economic developers in the region worked closely with the project planners to improve public physical infrastructure to attract the plant.
- **Scout carefully for needed equipment.**
Small-scale poultry processing equipment can be hard to find. If domestic manufacturers can't supply needs, consider looking at overseas suppliers.

III. Other in-state facilities

The processing facilities in Pittsboro and Bladenboro are the only two in the state that currently provide USDA-inspected custom slaughter services for independent producers of small animals. Other companies in the state are, however, either considering entry into this market or are vertically integrated, but are providing products that cater to the high-end and all-natural niche for specialty poultry meat.

Companies considering entry into custom poultry slaughter are primarily existing large-animal slaughter facilities that already provide custom slaughter. Expansion into poultry for an existing facility – one that already provides USDA-inspected services, that meets existing water and sewer requirements, has an existing labor pool and already has existing cold storage – should be much more cost-effective than building a new facility

from the ground up. Two companies who have investigated poultry processing are described below.

Chaudhry Halal Meat Company, Inc.

380 Stockyard Rd.

Staley, NC 27355

(919) 742-9292

Contact: Abdul Chaudhry

Plant Number: P19697 M19697

Located near Siler City, Chaudhry Halal Meat currently specializes in halal-certified goat for the Muslim market. The plant does hold a plant certification for further processing of poultry but does not at this time provide slaughter. Several sources have indicated that Chaudhry has an active interest in developing poultry slaughter services by expanding into an adjacent building on its premises. The cooperative Growers Choice, which previously used the Pittsboro plant, is now in discussions with Chaudhry to provide slaughter services for that group of approximately 15 farms.

Matkins Meats, Inc.

9683 Kerr Chapel Rd.

Matkins, NC 27249

(336) 584-8247 (phone)

(336) 584-8276 (fax)

matkinsmeats@bellsouth.net

Contact: Jerry Matkins

Plant Number: P07975 M07975

Matkins Meats has a well-regarded reputation for innovation and interest in specialty niche markets. Jerry Matkins reports he has discussed with NCDA&CS officials the possibility of processing birds and would be interested in looking at an expansion of his existing slaughter facilities to accommodate poultry.

Matkins is now working closely with NC Choices, a grant-funded project that is recruiting North Carolina farmers interested in small-scale hog production and the direct marketing of niche pork to local consumers. The goal of the project is to connect local consumers with farmers producing antibiotic-free, sustainably raised or certified organic pork. Matkins hopes to develop new processing lines to accommodate value-added production of pork products with NC Choices.

In 2006, two new slaughter facilities opened in the state to provide vertically integrated processing for high-end niche poultry products. These companies are next described.

Joyce Foods, Inc.

4787 Kinnamon Rd.
Winston-Salem, NC 27103
(336) 766-9900 (phone)
(336) 766-9009 (fax)
info@joycefoods.com
Contact: Ron Joyce

Joyce Foods is a specialty producer of all-natural poultry and game products located in Winston-Salem with a farming operation in the Piedmont region. Until recently, Joyce has provided only further processing of poultry products for distribution to specialty markets. In early 2006, the company opened its own slaughter line, using specialty chicken breeds grown under contract. The company markets its chicken under the brand name Ashley Farms.

On its company website, Joyce Foods promotes itself as a producer of premium, high-quality, branded, all-natural fresh chicken, turkey, duck and game products and uniquely prepared entrées. In addition, Joyce Foods works with small farmers to produce products offered in European markets but not normally available in the U.S. Some of these are old Heritage breeds that are no longer produced because they can't compete with faster-growing, higher-yielding commercially produced animals. In a test program, Joyce Foods has grown American Bronze turkeys and French Rouen ducks and will soon introduce for the first time in the U.S. a French Cou Nu chicken called Poulet Rouge Fermier, which is grown as a Label Rouge product in France.

Joyce Foods markets its products through established gourmet retail stores and food-service distributors who are center-of-the plate experts in fine-dining products.

Owner Ron Joyce has many years of experience in the poultry further-processing industry. He reports that the biggest challenge for any plant providing custom slaughter services for multiple independent producers is the need to address sanitation and disease threats. According to Joyce, "HACCP [Hazard Analysis and Critical Control Point] analysis should go back to the farm and begin at the hatchery." He is concerned that any plant accommodating multiple farms without strict on-farm sanitation and growing regimens runs a high risk of disease.

Joyce built his slaughter line adjacent to his existing processing facility in an approximately 1,200-square-foot area that had previously been used for storage. Though small, Joyce reports processing approximately 4,000 birds a week and hopes to expand up to 12,000 to 15,000 in the future.

Joyce says that at this time his company doesn't provide contract slaughter services. He says, however, he would entertain the possibility with the right producer or producers, with special emphasis on developing strict sanitary protocols. He also reports being interested in developing relationships with rabbit-meat producers.

Elite Foods, LLC

131 Business Center Dr.

Troy, NC 27371

(910) 571-0111 (plant phone)

(704) 624-3422 (office phone)

(910) 571-0113 (fax)

www.allisonsfamilyfarms.com

Contact: Brian Cuddy

brian.cuddy@alisonsfamilyfarms.com

Plant Number: P33826

Elite Foods, based in Marshville, opened a new plant in Troy in the summer of 2006. The business is owned by the Cuddy family, which has been in the turkey business in that region for several decades.

D. Bruce Cuddy, president and founder of the family-owned company, reported in a press release that the facility will manufacture the Alison's Family Farms line of all-natural poultry products. The new 38,000-square-foot plant has allowed Cuddy to expand his operations to include evisceration, cut-up and tray pack of air-chilled, antibiotic-free and organic chicken and turkey.

The company website reports that all of Alison's Family Farms products are certified "Humanely Raised and Handled." The birds are grown under certified humane conditions and are given more individual space than normally allotted.

The plant currently employs 60 workers but intends to soon double that number as capacity expands. The plant will be able to process 60,000 chickens and 5,000 turkeys weekly.

The company website lists among its customers Earth Fare, Green Life, Hannaford Brothers, Weaver Street Market, Reid's Grocery and Garners.

Lessons Learned

- **Niche marketing is attracting significant attention.**
The all-natural, hormone-free and free-range concepts have received sufficient consumer attention that even large vertically integrated producers are taking notice. Small independent producers will be unable to compete on price and humane-growing conditions alone.
- **Expansion of existing plants is a cost-effective option.**
Large-animal slaughter facilities and those facilities that in the past have only provided further processing can enter poultry slaughter and processing for much less than the cost of new ground-up construction. They employ an existing labor force that can be diverted to poultry processing on a part-time basis while production ramps up. Existing coolers, freezers and water and sewer infrastructure significantly lower the cost of entry into small-animal slaughter and processing.
- **Vertical integration provides greatest control for the processor.**
Consumers are interested in supporting independent small farms, and vertical integration allows for companies to manufacture a product that is consistent and meets the requirements of high-end retailers specializing in all-natural products.

Consistency in growing regimens on the farm, if properly implemented, may address quality and sanitary concerns.

IV. Out-of-state projects

Following are examples of small-animal slaughter facilities that show potential for replication in the state of North Carolina. The examples are classified according to facility governance, as follows: (1) agricultural producer/processor cooperatives, (2) for-profit companies and (3) other legal entities.

Agricultural producer/processor cooperatives

Large volume

Michigan Turkey Producers Cooperative

2140 Chicago Drive SW

Wyoming, MI 49519

(616) 245-2221

<http://www.miturkey.com>

During the summer of 1998, 15 turkey farmers in Michigan received devastating news. The local processing plant was about to close. Bil Mar Foods (a division of Sara Lee) announced that it was closing its plant located in Zeeland, Michigan. While turkey slaughter plants were available in Iowa and Indiana, the Michigan growers felt the additional shipping costs would negate any profits. It seemed that some of the turkey producers – whose family traditions in the business dated to the early 1900s – would soon be out of business.

This would have been a substantial loss for the region. Aside from considerations of tradition and family heritage, the 15 original cooperative members operated 40 farms in west Michigan, farming more than 15,000 acres. Michigan State University (MSU) poultry economist Allan Rahn reported that in 1998 western Michigan turkey growers had \$30 million invested in farm-related assets and were growing nearly eight million birds a year. It's estimated that the turkey industry in western Michigan has an economic impact of \$60 million. Ernie Birchmeier, a Michigan Farm Bureau commodity specialist, stated at the time that feed consumption for four million turkeys each year equates to 50,000 tons of soybeans, estimated at \$6.5 million annually, and more than four million bushels of corn, valued at \$8.6 million annually. Additionally, more than 200 people are employed on the farms and 300 at the plant, with a combined payroll of \$10 million. Over \$6 million a year is spent on purchasing poults.

Rather than quit, the turkey farmers developed the Michigan Turkey Producers Cooperative (MTPC) and set out to build their own state-of-the-art turkey slaughter and deboning facility in Wyoming, Michigan, just outside Grand Rapids. The group formed a limited liability company to facilitate financial decisions and eventually purchased and renovated a former Simplot potato processing plant in the city of Wyoming, opening operations in March 2000. Bolstering the considerable dedication of the local growers was the substantial help they received from regional and state sources. The Michigan Farm Bureau, MSU Extension, the Michigan Department of Agriculture and USDA Rural Development all stepped forward to help the cooperative.

According to Dan Lennon, MTPC's president and chief executive officer, the group gutted the building and started from scratch, constructing a new building inside the old one. The 190,000-square-foot plant is furnished with state-of-the-art equipment, some of which came from the Sara Lee plant in Zeeland. That plant, once used for raw processing as well as cooked products, was now strictly a cooked-product plant. The newly renovated processing plant was targeted to process 4.5 million birds a year, with annual sales projected to top \$70 million. Lennon also notes that over 300 jobs were created when the plant reopened, and the MTPC facility was the first new turkey processing plant to be built in the U.S. in 15 years. The cooperative built the plant with an eye toward food safety and the prevention of problems.

Growers pooled enough money to buy the facility, about \$4 million, and at the same time struck an agreement with Sara Lee to buy all its used processing equipment. Harley Sietsema, chair of the MTPC board, knew the group had to move fast because Sara Lee was threatening to soon put the equipment up for auction. According to Sietsema, keeping the facility and equipment as a package was important, so the group worked hard to bring the resources together to buy that equipment – to the tune of several million additional dollars.

Next up was remodeling the plant, including design and engineering and the installation of equipment. The co-op had an agreement in May of 1999 with CoBank to fund the project if producers could raise 30 percent equity. Although the group raised the required 30 percent, the bank came back to them about two months later, after the commitment for the facility had been made, and said that due to a worsening agricultural economy the co-op would have to provide 50 percent equity before the bank would finance the project.

Lennon feels that value-added products were an important addition to the cooperative's product line. He knew MTPC wouldn't want to be a commodity-only company. He believes that MTPC should stand on a multitude of products. He notes that there is more margin in value-added products, where the producer, rather than the market, sets the price.

Building a Cooperative on the Fast Track

July 1998: Twenty-five growers received notice from the Sara Lee-Bil Mar turkey processing plant in Zeeland, Michigan that they will no longer have a processing plant for the eight million turkeys raised annually in western Michigan.

September 1998: Fifteen growers form the Michigan Turkey Growers Cooperative (MTGC) with the objective of building a state-of-the-art turkey slaughter and deboning facility.

December 1998: Turkeys are no longer processed at the Zeeland plant; growers begin transporting birds to out-state facilities in Iowa and Indiana.

December 1998: The MTGC receives a USDA grant to conduct a feasibility study.

May 1999: The MTGC forms an LLC to generate additional equity.

June 1999: Renovations begin to turn the former Simplot Potato Processing plant in Wyoming, Michigan into a turkey processing plant.

February 2000: Eight MTGC members receive a USDA loan guarantee for stock purchases.

February 2000: The USDA inspects the facility and approval is granted.

March 2000: The first turkeys are processed at the new facility.

The cooperative also began selling direct to market: Its customers include Michigan State and Notre Dame universities and Gerber Foods. The group also sells to regional grocery chains, where store shoppers can choose from such products as fresh refrigerated links, patties, steaks and ground turkey. While the cooperative has competitors, Lennon believes they do have a competitive advantage: Because the products are produced in Michigan, the grocery store products are the freshest available, Lennon says. He says the meat is manufactured on Tuesday and is in the stores on Wednesday. The co-op offers raw product in all three of its brands (Golden Legacy, Silver Legacy and Legacy) and fully-cooked product in its premium brand (Golden Legacy).

<p>Golden Legacy</p> <p>Oven Ready (Roasts)</p> <ul style="list-style-type: none"> • Foil Wrapped • Cook in bag • Chef Ready (Non-Ovenable) • Cook/Chill Bag • ABF Roasts <p>Fully Cooked (ready to serve)</p> <ul style="list-style-type: none"> • Carving Quality Breasts • Slicing Quality Breasts • Shaving Quality Breasts <p>Cooked Specialty</p> <ul style="list-style-type: none"> • Hams • Luncheon Meats • Franks • Sausages • Breasts - Sliced & Logs 	<p>Silver Legacy</p> <p>Raw</p> <ul style="list-style-type: none"> • Steaks & Fillets • Burgers • Sausage Links & Patties <p>Legacy</p> <p>Raw</p> <ul style="list-style-type: none"> • FoodService Pack Products • CVP Products • ABF Ground Turkey • ABF Industrial Products • Industrial Pack Products • Retail/Cash & Carry Products
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Lennon wants to educate consumers. The MTPC hopes to create more of a market for consumers eating turkey in the same way they do chicken – grilled, baked, Cajun, fried – rather than only as cold deli meat or at Thanksgiving, as is most common.

Many people knowledgeable of processing cooperatives believe that management is as important as processing. The MTPC believes the key to success for new cooperatives looking to add value to their commodities is to hire professional managers. While the members of the cooperative need to be successful in their own individual businesses, bringing in top management to run the processing facilities is just as important. Before joining the turkey cooperative, Lennon was a sales and marketing director for Bil Mar. According to many of the founding cooperative members, his experience in turkey product development and sales was critical to the success of the cooperative. Lennon and Don Delardo, MTPC sales manager, began looking for customers months before the first turkeys were brought in.

With entry into the retail food markets, MTPC’s customer base broadened and so too has the line of products it produces. While the facility was originally equipped for processing strictly raw products, it has expanded over time. The growers are supplying heavy Tom turkeys and have developed a brand name and story line for those products tailored to the retail market. The products from the Michigan plant are marketed under the name Legacy or Golden Legacy for “top products,” such as breast meat; Silver Legacy for “second-tier products,” such as thighs and drumsticks; and Legacy for the ground products.

Accompanying the brand and logo is a history of the cooperative and of turkey production in Michigan and a list of the members of the cooperative.

Lennon believes raw turkey meat is basically a commodity. MTPC has differentiated the cooperative's products by adding flavors and creating portioned cuts like steaks, roasts and ground products. Long-term, Lennon says, the co-op plans to add more processing equipment to prepare products in vacuum-sealed packaging for food service and to eventually move into a cooked-product line.

Sietsema believes that as farmers' profit margins continue to tighten, more attention and interest will be directed at establishing cooperatives. He encourages local farmers to study the situation thoroughly before establishing a co-op. He believes the experience of the group in Michigan may be helpful, and suggests to others seeking to build a similar enterprise that they start by soliciting as much good information as they can get from university professionals and from other local entities. Sietsema notes that MSU and Michigan Department of Agriculture personnel, as well as the Michigan Farm Bureau staff, were extremely helpful in MTPC's formation and in explaining relevant legal and technical issues.

Sietsema also advises producers to know where in the food chain they're located. While Sara Lee's decisions and unfortunate recall situation created an unpleasant environment for the Michigan turkey producers, ultimately he believes it was good for them. Sietsema holds that it was inevitable the turkey growers were going to receive their wake-up call. The formation of the cooperative helped them get closer to the consumer, something he believes they needed to do.

Without doubt, the economic impact of the 15 original cooperative members in western Michigan was considerable. This undoubtedly helped the group attract the attention and resources of the local, state and national entities that assisted in organizing and developing the cooperative. However, while the Michigan Turkey Producers Cooperative may be on the large side among small processing cooperatives, much of its history and lessons learned could be applied directly to smaller groups of producers wishing to establish a small-animal slaughter facility.

This case study clearly shows that cooperatives can build and operate slaughter facilities that can at least break even. It shows how a group of producers working together were able to accomplish something that none of them could have accomplished alone. It also shows the importance of involving local, state and national service providers and other organizations. Calling on and obtaining the help of these organizations was critical to the success of this turkey cooperative. The founding members also stress the importance of proper management and of placing the right people in critical positions. Without the proper talent running the processing facility and in marketing and selling roles, this venture would not have been successful.

Perhaps most important, this case study shows how one cooperative ensured demand was there for a facility by developing markets for both their commodity and value-added meat products. This clearly illustrates that management, marketing and sales are as important as the slaughter and processing aspects of the cooperative.

Lessons Learned

- **There's strength in numbers.**
While the original 15 turkey farmers may as individuals have had a difficult time attracting attention to their plight, their strength as a group allowed them to gain attention and momentum.
- **Local, state and national government entities and service providers can help.**
Time was of the essence, and the group needed to mobilize quickly. In need of immediate assistance in such keys areas as organization and finance, they turned for assistance to local universities, state agencies, government service providers and other entities.
- **Management is important.**
Aside from the management of the individual members' farms, the cooperative knew it would be important to attract the services of talented managers not only in the processing plant but in sales and marketing as well.
- **Expand your product line.**
Perhaps most important, the cooperative wasn't satisfied with simply providing commodity products. By expanding their product line, they greatly increased their market exposure as well as their profit margin.

Agricultural producer/processor cooperatives

Small volume

EcoFriendly Foods, LLC

3397 Stony Fork Rd.

Moneta, VA 24121

(540) 297-9582 (phone)

(866) 326-3743 (toll-free phone)

(540) 297-9583 (fax)

letsmeat@ecofriendly.com

Plant Number: P21938 M2138

EcoFriendly Foods was founded by Bev Eggleston, a protégé of Joel Salatin, a renowned advocate of small, ethical family farming and of raising pasture-fed animals. Eggleston's processing plant is approved for both rabbit meat and poultry slaughter and processing. Bev and Janelle Eggleston purchased a processing plant and completed a comprehensive, two-year renovation project in 2004, which has resulted in an updated USDA-certification and the opening of the EcoFriendly Foods Processing Plant.

According to their website, EcoFriendly Foods offers a bridge for the marketing and distribution of meat products for farmers who are embracing the model of humane and ethical standards for grass-based farming. Emerald Family Farms, a consortium of small family farms and young farmers, was developed to provide the needed control and accountability for the production of these products.

The plant sells its products through many outlets, including their own on-site retail store and at farmers markets throughout Northern Virginia. EcoFriendly food products are also distributed through home buying clubs in Washington DC, Virginia, Maryland and North Carolina.

The company promotes itself as a viable model for humane and ethical meat production. While the Egglestons process their own meat, they also provide custom slaughter services for other independent growers. As of October 2006, custom and USDA-inspected slaughter fees are as follows:

Chicken/custom or USDA

Bulk in Boxes: \$2.50 per bird

Packed in 4 MI Vac Bags: \$2.85 per bird

Whole Bird Cut/4 MI Bags: \$4.50 per bird

Turkey/4 ML Bags: \$8.00 per bird

Rabbits/custom

Whole: \$4.00 each

Cut-up: Contact for price quote

Puget Poultry

Michaele Blakeley

14201 58th St. SE

Snohomish, WA

(425) 941-4895

www.pugetpoultry.org

A much smaller cooperative than the MTPC recently has been formed in Snohomish, Washington, covering processors in the tri-county region of King, Snohomish and Thurston counties. Five individuals recently formed this processing cooperative with the intent of initially processing 200 to 300 birds a week and ramping up to 500 or more a week in a year or so. According to founding member Michaele Blakeley, because the group would process over 20,000 birds annually, and because some members wished to market their product interstate, the cooperative is seeking to establish a USDA-inspected facility. Blakeley notes that several other prospective members were “waiting in the wings” for the facility to be opened, and she projected that by the end of the first year the cooperative will have 50 to 60 members. While nonmembers will be allowed to use the facility, members of the cooperative will receive discounted rates.

Blakeley says the cooperative has been legally established and has received the financing it needed to open but has not yet secured a building suitable for leasing. One cooperative member formerly operated a USDA-inspected slaughter facility and is bringing in much of the equipment. The group has held discussions with local USDA personnel and hopes to open soon after securing a 1,500- to 2,500-square-foot building. The co-op’s processing facility will be a certified organic one. The ultimate size, design, equipment layout and so forth is dependent on the results of a local market-demand survey the cooperative has just begun.

The biggest problem the cooperative is facing at this time is that of the building. Given the complexities of siting a chicken slaughter facility in the greater Seattle area, Blakeley says the group has been unable to find a suitable building with proper zoning and health department approval (primarily water and sewer issues). However, she states they’re looking at several buildings at present and believes that one of them will be suitable. Based on conversations between the cooperative, USDA staff and state personnel, she believes the facility should be open and processing birds very soon.

Blakeley says the cooperative is strictly a processing one, although some of the members are contemplating starting a grower's cooperative to help members with farming issues and issues relating to marketing. Blakeley says that most members sell their birds locally, to restaurants and at the farmers market. An Internet order form is available on their website for local ordering. They don't presently drop-ship any birds via UPS or FedEx.

The cooperative plans to offer whole-bird processing as well as a cut-and-warp operation. No cooked/ready-to-eat products are being considered at this time. The co-op is seeking producers with birds up to 6 lbs. dressed weight, delivered clean, live and healthy, in batches of at least a hundred. During the processing, they will be able to save the heart, liver and neck and package those items inside the bird, should the grower desire. They will also offer individual vacuum packaging, weighing and labeling with grower information and weight. The processing facility can't provide labels with logos, long-term storage or transport. Long-range plans are to include turkey, rabbit and duck processing as well.

Puget Poultry is in the process of conducting the following survey of existing and potential poultry processors who may be potential cooperative members:

Puget Poultry Producer Survey

Puget Poultry will benefit the small-scale poultry grower, meeting their need for poultry processing under USDA inspection and/or organic certification, and making products eligible for sale off-farm to high-end restaurants and retail stores. We are looking for grower-members, ranging in scale from back yard growers to large family farms. Growers and other interested parties are invited to invest cooperatively and get involved in the production of local, organic, and pastured poultry for our region. Have you got pluck?!

The Cooperative will deal primarily in the processing of quality broilers, but we will also offer processing for ducks, turkeys and rabbits. Our first plant will be located in the greater Seattle area. We will offer USDA inspected processing, which will eliminate processing-related restrictions on where and how the poultry products are sold. We will also be able to process certified organic product.

In order to serve you, we are asking current and potential poultry producers to inform us of your perceived needs.

Our primary broiler processing price would be for:

- Birds up to 6 lbs dressed weight delivered clean, live, and healthy in batches of at least 100
- Saving heart, liver, and neck (packaged inside the bird, if desired)
- Individual vacuum packaging, weighing, and labeling with grower information and weight
- NOT included would be: labels with logos, long-term storage, and transport

1) How many birds per year would you be interested in having processed, if the cost were:

- \$3.00 per bird _____
- \$3.50 per bird _____
- \$4.00 per bird _____
- \$4.50 per bird _____

Please check the following if they apply to the animals you raise, or wish to raise in the future.

- Certified organic
- Pastured

2) Would you be interested in the following additional processing services at additional costs:

Processing batches of chickens fewer than 100; how many at a time? _____

- Saving gizzards.
- Freezing.
- Long-term frozen cold-storage
- Cutting up chickens into boneless breasts, thighs, drumsticks, wings, etc.
- Retail tray packaging pieces.
- Bulk bag packaging pieces.

3) Would you be interested in processing for the following animals:

- Turkeys.
- Ducks.
- Rabbits.
- Laying hens/roosters
- Other _____

4) To become a member of the co-op you would have to invest in a share of co-op stock, which could be sold if you ever left the co-op.

What is the highest one-time membership investment level you would be willing to make?

- \$100
- \$200
- \$500
- \$1000

5) Your production status:

- Currently producing poultry.
Types of poultry and production methods _____
- Have produced in the past, but not currently producing.
Types of poultry and production methods _____
- May produce in the future.
Types of poultry and production methods _____

6) If you are a current producer:

How many birds are you producing per year? Give separate figures for each type of poultry.

What is your current processing cost per bird? _____

Describe processing (home, WDSA inspected ...) _____

7) Any further comments, suggestions, or questions?

8) Please provide your name, farm, and contact information:

Name _____

Farm name _____
Address _____
City, State, ZIP _____
Phone _____
E-mail _____

9) Would you be willing to participate in a local focus group, in order to discuss how the cooperative can meet the needs of growers in your area?

PLEASE RETURN BY E-MAIL (info@pugetpoultry.org)
OR POSTAL MAIL TO:

Puget Poultry
c/o John Lane
14201 58th ST SE
Snohomish WA 98290

AND PLEASE REFER OTHERS TO OUR WEB SITE SURVEY (www.pugetpoultry.org)

Lessons Learned

- **It takes longer than you think.**
This grassroots effort to establish a small-animal slaughter facility has taken over three years. Founding cooperative member Michael Blakeley says the group has persevered over much time and travail. Even though the proposed facility is small (1,500 to 2,500 square feet), the time required to organize the members, legally establish the entity and seek appropriate financing has been lengthy. Blakeley wonders what additional time would have been required if the group had tried to raise the money necessary to construct their own building. Even finding a suitable building to lease is taking far longer than expected.
- **Information on market demand is essential.**
The cooperative is in the process of developing market-demand information through a local survey process. This is important information that will help establish the organization, layout and operation of the processing facility. The survey will collect important information from existing and startup growers in such key areas as number of birds to be processed, other small animals to be processed, processing desired and process pricing, desire to join the cooperative, a prospective member's price sensitivity to joining the group and so on. Determining the market demand for the facility is an important step to take before designing and opening the facility.

For-profit companies

Nature's Premier Organic Chicken, LLC

372 List St.

Frankenmuth MI 48734-1949

(989) 652-9840

<http://www.naturespremier.com/index.htm>

It's not uncommon for small-scale slaughter operations to seek a competitive advantage over larger producers through niche marketing. Given the tremendous scale of large chicken slaughter facilities, smaller operations can't achieve the volume of birds necessary to market their products on the basis of a competitive price. These small facilities, however, can be competitive against the low-cost producers on the basis of other product attributes – for example, quality, locally grown, organic, free range or pasture poultry.

One successful for-profit company comprises three Michigan entrepreneurs. In 2004, Les Dale, Wes Reinhold and Scott Miller formed Nature's Premier Organic Chicken, a limited liability company. All three men had backgrounds in chicken farming. Dale grew up on a farm and started raising chickens when he was 10 years old. Reinhold is a fifth-generation farmer who grew up on a farm near Frankentrost, Michigan. When Miller was only a year old, his dad began raising chicks and running an egg production business.

Dale studied at Michigan State University, where he earned his bachelor's, master's and doctoral degrees in poultry science, as well as an MBA in food marketing. In 1988, he started his own part-time business raising broiler chickens. He developed a production regimen that produced an excellent tasting bird that has significantly less fat than most other broiler chickens.

Both Reinhold and Miller began supplying chickens to Dale's operation – Reinhold in 1984 and Miller in '94. Miller currently runs a growing farm near Owendale, Michigan. Dale and Reinhold shared a vision to create a unique broiler-chicken business, and together with Miller explored ideas and opportunities until they established Nature's Premier Organic Chicken.

The company now operates from their leased 8,000-square-foot plant located in Frankenmuth, Michigan. The plant is configured with a 2,000-square-foot killing and evisceration area; 1,200 square feet of cut-and-packaging operations; 2,000 square feet of cooking and further processing; and 2,800 square feet of dry and cold storage, administration and office area.

Dale reports that he sold his original operation back in the mid 1990s. The business was unsuccessful under these first buyers and was eventually sold to another owner. The second owner was also unsuccessful, and the plant sat idle for some time. In 2004, Dale once again took over the operation, this time with his current partners.

The entire plant was constructed using fiberglass reinforced panel (FRP). While FRP is less expensive in the beginning, Dale says that he's now faced with significantly higher expenses in terms of maintenance.

Dale says that middle-of-the-line equipment was used from Ashley Equipment (located in Indiana) and Brower Equipment (located in Iowa):

Ashley Equipment
PO Box 2
Greensburg, IN 47240
(812) 663-2180

Brower Manufacturing
609 Houghton Main St.
Donnellson, IA 52625
(319) 469-4141

Rather than use the large-scale, inline equipment that's typically used in large slaughter facilities, Dale chose batch-processing equipment. While the processing capacity of inline equipment is significantly greater than batch equipment, the size of the product going down the line must be fairly uniform for optimum operation. Given the relatively small number of birds the company processes each week, Dale found the flexibility and reliability of batch-processing equipment far outweighed the increased capacity of inline equipment. According to Dale, the more mechanized the line, the more uniform the birds must be. He reports that his batch equipment can process anything from a Cornish game hen to a 20-lb. turkey. He also believes that, if he wished to, he could process rabbits with the Ashley equipment.

The plant currently kills about 2,000 birds a week, although the equipment is rated for up to 1,200 birds an hour. The company has no significant seasonality. Dale says that running the equipment at about 500 birds an hour is best for the company and helps them reach the USDA target for *E. coli*. When the equipment is operated at higher speeds, he's found a significant increase in *E. coli* among the processed birds.

Dale estimates that his operation was capitalized with approximately \$2.3 million, consisting of owner's capital and bank financing. His biggest financial hurdle at present is obtaining sufficient working capital. He estimates that today his equipment would cost about \$500,000.

The company employs 32 individuals, with 22 in operations (killing and evisceration), seven in further processing (including cooking), three in administration and one in sales and marketing. Dale says the company is also in the process of building a network of specialty brokers around the country.

The company is a USDA-inspected facility and is under continuous inspection. The USDA inspector must be onsite when the birds are killed but isn't mandated to be there during further processing. The company doesn't pay the inspector's salary directly as long as the inspector is limited to an eight-hour day, but is responsible for the inspector's overtime. The inspector is present when the birds are killed and may or may not be there when processing occurs. The company reports that operating under USDA inspection can be onerous at times. It's undergone all the required USDA planning, including a Hazard Analysis and Critical Control Program plan (Dale advises using a consultant), Standard Operating Procedures, a product recall program, a standard sanitation program, as well as other required USDA paperwork.

Dale says one of the company's biggest hurdles relates to size. He says that if he were slaughtering 20,000 or fewer birds a year, he could operate under the USDA category of retail exempt. This would allow the company to sell directly to consumers and restaurants

but not to resellers; it would also prohibit it from selling across state lines. However, given the much less expensive operating environment of a non-USDA plant, the financial gain may be greater than running a small plant under USDA inspection.

Dale believes that 2,000 birds a week is too small under USDA inspection unless at least 50 percent of the product is further processed, especially cooked/ready-to-eat products. Too little cooked and too much fresh would not be profitable. Dale estimates that under USDA inspection he would have to process 3,000 birds a week or more to reach the break-even point without further processing.

Dale also reports that packaging was a problem early on, one that the company is still working its way through. Especially important was packaging for what the company calls “salad meat” – cooked/ready-to-use product for salads, pastas, etc. The company’s 10-oz. salad meat and 12-oz. package of wings are now being vacuum packed. Dale believes that in this premium market – and given the shelf life requirements of products like these – “overwrap” packaging, the industry standard, is inappropriate. He also says that “gas flush” packaging would be even better but is more expensive than vacuum packed.

Dale says the company is adding a freezing capability to its existing fresh packaging. Currently, when customers order direct from the company they receive their order fresh via UPS or FedEx in dry ice containers. He hopes to be adding frozen delivery in the near future.

Dale’s advice to anyone getting into this business is to get sound, knowledgeable guidance before entering the market. He notes that the company has launched products that would have fared even better with some marketing and packaging advice upfront from industry experts.

He also states that even if the product is highly differentiated (e.g., organic, free range, etc), small companies can’t compete with large producers with raw product alone. Small firms need cooked/ready-to-eat product to successfully compete with the large producers because these products carry a significantly higher profit margin than raw product.

Much of what Dale related in his interview is echoed in the company’s website, which states a commitment “to raising our chickens under the best possible conditions. This means the healthiest feed, most humane handling, and plenty of fresh air, clean water and sunshine.”

The company’s niche market is based on three attributes of their products:

- Organic
- Free range
- Humanely treated

The company has achieved three certifications relating to their niche attributes:

- Certified Organic by the Organic Growers of Michigan for the USDA
- Certified Free Farmed by the American Humane Association
- Certified Humane Raised and Handled by the Humane Farm Animal Care Program

According to Dale, the integrity of the certifying agency is extremely important in developing and maintaining both brand image and the specialty nature of the product.

The certification agencies for Nature’s Premier Organic Chicken are as follows:

Certification Agency	Agency Information
<p>Organic Growers of Michigan 1824 66th Street. Fennville, MI 49408 (269) 543-4315 http://www.michiganorganic.org</p>	<p>Organic Growers of Michigan (OGM) is a nonprofit <i>USDA accredited</i> certifying organization of more than 200 organic farmers, gardeners and friends who are interested in organic practices and organically raised food. OGM was established in 1972 and is the second oldest state organic certifying agency in the USA. OGM is organized into six chapters located throughout the entire state of Michigan. OGM spans the state from Detroit to the western Upper Peninsula. OGM has a certification system that assures the public that our crops and livestock are grown according to strict organic principles. This means that food purchased from OGM certified growers is produced without the use of artificial fertilizers, chemical pesticides, antibiotics, hormones or any synthetic substance.</p> <p>Purchasing locally grown, organically produced fruits, vegetables and meat assures you of having the very best food available for your family's table. By supporting your local grower, you keep your wealth within your own community where it recirculates over and over again. And finally, by going <i>organic</i> you are assured of feeding your children and yourself food that has not been polluted with toxic chemicals added by the farmer or food processor. If you want clean and fresh quality food, call or e-mail your local organic farmer or chapter of the Organic Growers of Michigan. OGM is a member of the <i>Michigan Chamber of Commerce</i> and Michigan Organic Food and Farm Alliance (MOFFA).</p>
<p>American Humane Association 63 Inverness Drive East Englewood, CO 80112-5117 (303) 792-9900 http://www.americanhumane.org/site/PageServer?pagename=pa_farm_animals</p>	<p>Back in 1877, humane organizations from throughout the country met to unite their missions in a stronger voice. At that historic meeting in Ohio, the American Humane Association was formed.</p> <p>At that time, one of the first goals of the organization was to protect livestock in transit from the West to the East. This involved addressing the horrible conditions of slaughterhouses and railcars, in which cattle and hogs were forced to travel for days without rest, food, or drink.</p> <p>American Humane immediately went to work to solve these horrible problems and ensure the humane treatment of cattle, hogs, sheep, and eventually poultry, as well. And our work did not end there.</p> <p>Today, American Humane protects farm animals through the groundbreaking Free Farmed™ program. Through this program, consumers can be guaranteed that the products they select are from animals that were raised and treated compassionately and humanely.</p>
<p>Human Farm Animal Care PO Box 727 Herndon, VA 20172 (703) 435-3883 http://www.certifiedhumane.com/whatis.html</p>	<p>The Certified Humane Raised & Handled Label is a consumer certification and labeling program. When you see the Certified Humane Raised & Handled label it means that an egg, dairy, meat or poultry product has been produced with the welfare of the farm animal in mind. Food products that carry the label are certified to have come from facilities that meet precise, objective</p>

	<p>standards for farm animal treatment.</p> <p>QUALITY STANDARDS</p> <p>A team of veterinarians and animal scientists developed the <i>Animal Care Standards</i> to ensure that producers and processors keep animals in conditions that have met high standards of animal care:</p> <ul style="list-style-type: none"> • Allowing animals to <i>engage in their natural behaviors</i> • Raising animals with <i>sufficient space, shelter and gentle handling to limit stress</i> • Making sure they have ample fresh water and a healthy <i>diet without added antibiotics or hormones</i> <p>Under the system, growth hormones are prohibited, and animals are raised on a regular diet of quality feed free of antibiotics. Producers also must comply with local, state and federal environmental standards. Processors must comply with the American Meat Institute Standards, a higher standard for slaughtering farm animals than the Federal Humane Slaughter Act.</p>
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Of its three niche attributes, the company believes that the organic certification boosts its marketing efforts best. The company website states the following regarding organic:

Organic food has been grown or raised without the use of chemicals, genetic modification or radiation. Organically raised chickens are given no antibiotics or growth stimulants and must be fed 100% organically grown feed.

In addition, the chickens must have easy access to fresh, clean water and to the outdoors for fresh air and sunshine. These procedures ensure the chickens' health by reducing their stress and thereby reducing illness and the need for antibiotics.

These standards were established by the National Organics Standards Board (NOSB), which is a sub-group of the United States Agricultural Department (USDA).

In order to be certified organic, very specific rules must be followed regarding:

- The type and quality of feed given
- How the animals are raised
- How they are slaughtered and processed.

Certification is granted by a USDA-approved certifier who inspects the farm and processing plant. They also review documentation to verify compliance with the established requirements.

The company believes its product is the “the best chicken money can buy,” most particularly in terms of taste, nutritional value and purity. Further, it believes eating organic chicken offers value in what it does not contain. Specifically, the birds processed at Nature’s Premier Organic Chicken have received:

- NO genetically modified grains
- NO animal or poultry by-products
- NO antibiotics
- NO growth stimulants
- NO injections during processing
- NO feed that has been grown with chemical fertilizers, pesticides, fungicides or herbicides”

Most telling of the company’s marketing materials may well be the standards it uses to differentiate its chickens from other birds. It’s quick to point out that “all natural” is not the same as “organic”:

Unlike “Organic,” the term “All Natural” is not a USDA-regulated term and therefore can mean just about anything. Many companies may claim their “All Natural” chicken is antibiotic- and stimulant-free. They may also claim that they use high-quality feed or make some other claim that may lead the consumer to believe that “All Natural” is as good as “Organic.” However, without independent, third-party verification of these claims, there is no way to be certain. “USDA Organic” on the label means the product meets the requirements of, and is certified according to, the NOSB standards.

The company offers the following chart to make sure consumers understand the differences between Nature’s Premier Organic Chicken and other chicken:

FEED	NATURE’S PREMIER ORGANIC	“ALL NATURAL”	TYPICALLY MASS PRODUCED
Grown from genetically modified seeds	NO	?	YES
Grown with insecticides and pesticides	NO	?	YES
Grown with chemical fertilizer	NO	?	YES
Includes animal/poultry by-products	NO	?	YES
Fat added (to reduce cost)	NO	?	YES
Least expensive	NO	?	YES

LIVING CONDITIONS	NATURE'S PREMIER ORGANIC	"ALL NATURAL"	TYPICALLY MASS PRODUCED
Antibiotics used	NO	NO	YES
Growth stimulants used	NO	NO	YES
Medications administered routinely	NO	?	YES
Minimal space for movement	NO	?	YES
Able to go outdoors	YES	NO	NO
Regular exposure to sunlight	YES	?	?
Vaccinations	NO	?	YES
Routine surgical procedures (cut toes, cut beaks)	NO	?	?
PROCESSING	NATURE'S PREMIER ORGANIC	"ALL NATURAL"	TYPICALLY MASS PRODUCED
Every bird inspected 3 times	YES	?	?
Large communal bath for chilling	NO	?	YES

One of the major differences between Nature's Premier Organic Chicken and other producers' chicken is fat content. Their website states:

Our chickens are raised on a specially formulated low-fat, high-protein organic feed that results in meat that is only 7% fat on average compared to around 15% fat for other chicken. Less fat in the chicken you eat, means less fat on YOU!

Total Fat of Nature's Premier Organic Chicken Compared to USDA National Database

GRAMS OF TOTAL FAT IN 100 GRAM SAMPLE	NATURE'S PREMIER ORGANIC *	USDA AVERAGE **	PERCENT REDUCTION
WHOLE CHICKEN (a)	7.41gm	15.06gm	-51%
BONELESS SKINLESS BREAST (a) (b)	0.34gm	1.24gm	-73%
DRUMSTICKS (a)	5.15gm	8.68gm	-41%
THIGHS (a)	8.18gm	15.25gm	-46%
WINGS	12.00gm	15.97gm	-25%

* Great Lakes Scientific, Inc., August 2004, Reports 44137-44141

** USDA National Nutrient Database for Standard Reference, Release 17 (2004)

(a) Can be labeled lean

(b) Can be labeled fat-free

The company offers a wide variety of products, both fresh and cooked, that can be purchased directly from the company through their website.

Products include:

<p>Fresh Chicken Whole Birds - No giblets (\$2.69 lb.) Boneless Skinless Breasts (\$6.49 lb.) 8 Piece Cut Up (\$2.99 lb.) Drumsticks (\$2.89 lb.) Wings (\$2.89 lb.) Split Breasts (\$4.99 lb.) Boneless Breast Skin On (\$5.99 lb.)</p>	<p>Ready-To-Eat Lunch Packs Wings (unit price \$3.60) Spicy BBQ Thighs (unit price \$3.60) Natural Marinade Thighs (unit price \$3.60) Hickory Smoke Drumsticks (unit price \$3.60) Spicy BBQ Drumsticks (unit price \$3.60) Natural Marinade Drumsticks (unit price \$3.60) Hickory Smoke</p>
<p>Ready-To-Eat Salad Meat Salad Meat (unit price \$3.89) Natural Marinade Salad Meat (unit price \$3.89) Hickory Smoke</p> <p>Salad Meat 1lb Tray Packs Salad Meat (unit price \$7.00) Natural Marinade Salad Meat (unit price \$7.00) Hickory Smoke</p>	<p>Ready-To-Eat Tray Packs Drumsticks Spicy BBQ (\$4.99/lb.) Drumsticks Natural Marinade (\$4.99/lb.) Drumsticks Hickory Smoke (\$4.99/lb.) Thighs Spicy BBQ (\$4.99/lb.) Thighs Natural Marinade (\$4.99/lb.) Thighs Hickory Smoke(\$4.99/lb.)</p>
<p>Ready-To-Eat One Pound Wing Packs Wing Packs Natural Marinade (\$4.99/lb.) Wing Packs Spicy BBQ (\$4.99/lb.)</p>	<p>Ready-To-Eat Leg Quarters Leg Quarters Hickory Smoked (5.49/lb.) Leg Quarters Natural Marinade(5.49/lb.)</p>

In addition to selling products online, the company website provides a listing of retail outlets for their products, both grocery and restaurant, as well as a special contact number for those wishing to purchase bulk or custom orders.

This for-profit example shows that small-scale poultry slaughter facilities can successfully compete with the large, vertically integrated slaughter facilities. They can't, however, do so on the basis of price alone. Smart entrepreneurs have found they can successfully market locally grown birds based on product attributes that matter to the consumer. In the case of Nature's Premier Organic Chicken, three attributes were selected: organic, free range and humane treatment. Based on these attributes, the company has successfully marketed their products through local markets and direct sales. The company believes its success was also due to the development of additional product lines, especially those products that are cooked/ready to eat. While the whole bird was the launch pad for the company, developing additional, value-added products was necessary for the company to prosper.

Lessons Learned

- **The entrepreneurial lesson.**
 As is often the case in entrepreneurship, the principals in Nature's Premier Organic Chicken came to the venture with a long history in the industry.
- **Small, niche producers can compete successfully against the large producers.**
 This small producer is competing successfully against large producers not on the basis of price; rather, on its own, carefully chosen terms. The costs of production and lack of a substantial marketing budget, combined with inefficiencies tied to its small scale, would never allow the company to compete against low-cost producers on the basis of price.

- **Differentiate your product.**
To compete successfully, the company needed to differentiate its product. This small entrepreneurial venture is successfully competing with the large producers on the basis of product attributes. The company used organic certification, the free-range nature of their birds and humane treatment to design a product that was very different from the mass-produced chicken of the mega-producers.
- **Expand your product line.**
Perhaps most important, the company didn't stop at the whole bird. After it had developed a product that was differentiated from the mass-produced chicken, it developed additional products to broaden its market reach and increase sales. By expanding its product line, the company greatly increased its profit margin. Especially important is the ability to offer cooked/ready-to-eat products, because of the high profit potential they afford.
- **Management is important.**
Good management was integral to the company's success. All the partners were experienced in the poultry industry. Les Dale had operated a conventional slaughter facility and was well informed as to traditional production practices. Additionally, Dale had an educational background in both agriculture and business.

Other legal entities

State universities

Kentucky State University

Steven Skelton
Academic Affairs
400 East Main St.
Frankfort, KY 40601
(502) 597-7501

A very interesting project is located in Kentucky – interesting both in its form of ownership, a state university, as well as for the fact that it began its life as a mobile poultry slaughter facility but is today semi-grounded.

Several years ago, a mobile poultry slaughter facility was developed in Kentucky to aid small-scale local growers. Two nonprofit organizations, Heifer International and Partners for Families, joined with Kentucky State University (KSU) and the state departments of Agriculture and Health to develop the project.

The roving facility was built for a total cost of \$70,000 on a 20-by-7-foot aluminum horse trailer. The unit was outfitted with approximately \$40,000 of equipment, including the cost of the trailer, a plucker, a scalding tank, several kill cones and a stun knife. KSU's Steven Skelton notes that he's now looking at replacing some of the equipment, and that current prices are as follows:

Plucker: \$6,000
Scalder: \$6,000
Kill Cones
 Chicken: \$35/cone
 Turkey: \$53/cone
Variable-control stun knife: \$2,500

The trailer was originally outfitted with small-batch equipment from Brower Manufacturing. Given his recent difficulty in obtaining replacement parts, Skelton has decided to purchase his replacement equipment from Ashley Equipment.

The purpose of the roving plant was to provide small-scale poultry producers with the opportunity to slaughter their birds on the farm and under their own control. The facility was able to move from farm to farm, and the individual producers provided the necessary labor – often one of the most significant expenses in small-scale slaughter. The facility was shared-use, meaning that the cost of the facility could be borne by its many users rather than single producers having to maintain individual, on-farm facilities.

Another important aspect for the small producers was the ability to get back the same birds they brought in. In large slaughter facilities, operators typically can't guarantee that the birds brought in are the ones being delivered to the producers at the back end. This simply isn't acceptable for small producers who have invested considerable time, money and effort in differentiating their products. Producers who bring free-range, organic and/or pasture poultry or other birds signifying the producers' efforts need to retain those exact, highly differentiated birds.

While the state of Kentucky didn't have a formal state meat-inspection program for mobile slaughter facilities, the state Department of Health and other state regulatory agencies came up with a plan that allowed the mobile facility to operate. The plan was complicated, however, and some problems did occur. One such problem was licensure and compliance in the regulatory environment. Many of the requirements were identical to the requirements a USDA-inspected plant would operate under. The mobile plant needed to have an HACCP plan, a Standard Operating Procedures plan and a Product Recall plan.

A second regulatory problem had to do with solid-waste disposal and disposal of the rinse water used during the clean-up process. The state was adamant that both the solid waste and the rinse water be handled in an appropriate manner and that they not be simply "dumped" at each farm site. This resulted in the state requiring that a "docking station" be in place at each site at which the mobile facility was to be used, greatly increasing the cost and reducing the efficiency and mobility of the unit.

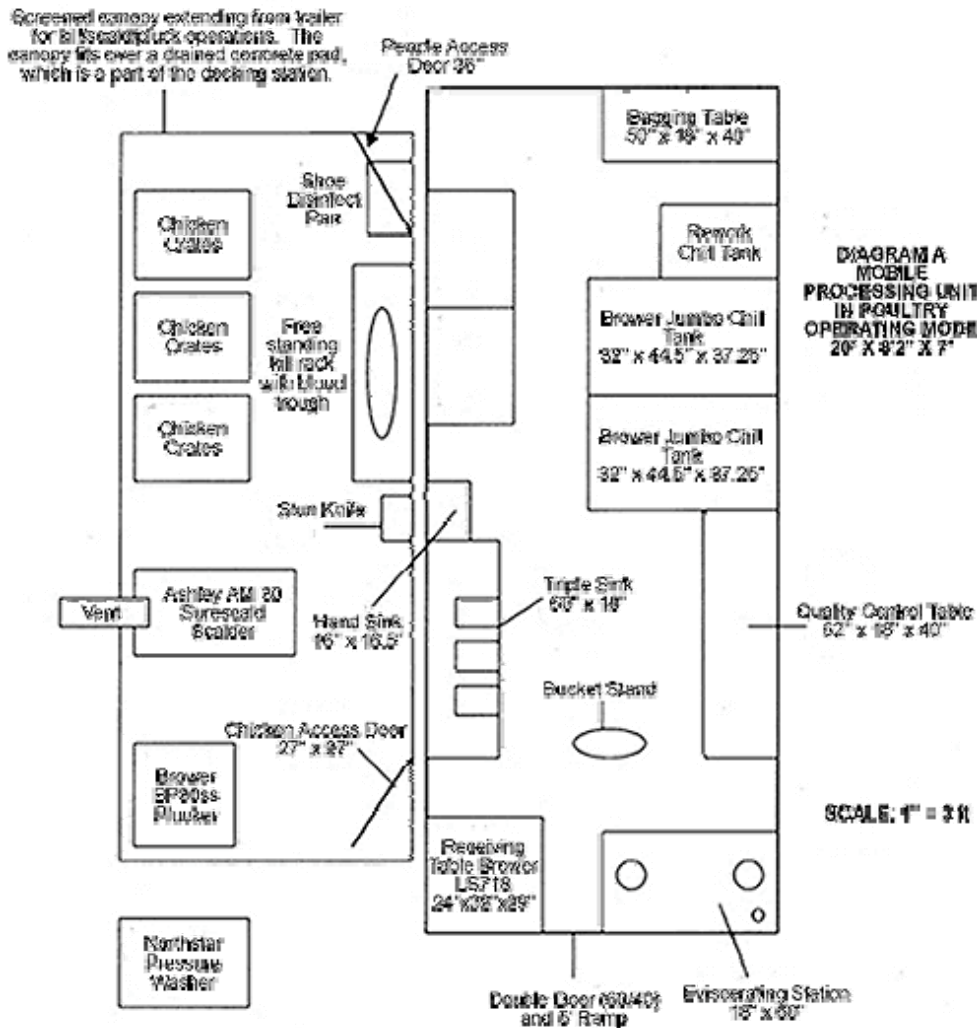
Yet another problem was related to insurance: The required insurance was substantial and often more than an individual producer could afford. When the facility was operated by Heifer International as a true mobile facility, farmers were required to have a million dollars in product-liability insurance. This cost approximately \$1,000 a year for a farmer in Kentucky, which was deemed prohibitive.

For all these reasons, KSU took over the mobile processing plant in February 2006. The plant is now semi-grounded at a permanent docking station located at KSU's Frankfort research farm, but there is still hope that other docking stations will be developed so that

the unit might again be mobile. The hope is that permanent docking stations can be established, allowing the unit to cover the whole of the state.

Skelton reports that a docking station is nearing completion in Morehead and that a seven-county collation is determining the feasibility of establishing a station in Jackson County. A group in Eddyville is attempting to establish a station there as well. With the addition of three permanent docking stations, the unit could have a permanent route covering the entire state, not unlike a bookmobile.

Grounding the unit did alleviate some of the problems related to operating a mobile processing facility. For one, product-liability insurance is now paid by the university. The producer must sign a waiver that indemnifies the university should the farmer or any farm laborer be injured during use of the facility.



KSU opened the facility in July 2006. During the first week of official operation, 268 chickens were processed. Skelton believes that volume will fluctuate from between 50 to 300 birds a week. The unit presently processes whole birds, although it's approved for distribution of intrastate cut and wrapped products. While cut and wrapped products will

eventually be offered, the facility has no ability or intention to process cooked/ready-to-eat products.

The facility is currently approved for chicken and turkey, shrimp, fin fish and caviar. KSU personnel hope to seek approval in the near future for pheasants, partridge and guinea fowl.

While Kentucky grounded its mobile processing unit, many other states are modeling mobile processing efforts on the Kentucky experience. The state of Washington has two mobile processing units, one in the eastern region of the state and the other in the western region. New York and Vermont are both intending to start mobile chicken processing units in the near future. It appears that the state regulatory environment plays a substantial role in determining if a mobile processing unit will be successful or not in any given state.

Lessons Learned

- **The mobile idea sounded good but encountered obstacles.**
The idea of a truly mobile chicken slaughter facility initially seemed to be a sound one. By bringing the slaughter facility to the small-scale chicken farmer, the unit could service the needs within a given geographic area. Local farmers could develop the ability to slaughter and market their own birds. Lower costs and the ability to allow producers to retain their own birds after processing were attractive incentives. Ultimately, however, disposing of the solid waste and post-slaughter rinse water and other regulatory and sanitation issues grounded this idea.
- **Semi-grounding the facility's mobility solved the issues.**
By offering permanent docking stations around the state, KSU hopes to maintain the positive aspects of the facility (shared-use and bird differentiation) while minimizing regulatory and sanitation issues.
- **USDA inspection was infeasible**
Given the cost of maintaining a USDA-inspected facility and the small number of birds processed each year, it was infeasible to obtain USDA status. Given the small annual production volume, the local market can easily absorb all the product.

Other nonprofit organizations

One model of business ownership and operation missing is that in which a local or regional nonprofit organization would hatch the concept among its constituents and develop interest. After a period of feasibility determination – during which the local market demand is gauged and an appropriate facility is designed – the nonprofit would raise the funds needed to build the facility. The facility could be operated in a shared-use manner, whereby local users rent the facility by the hour and supply their own labor. Conversely, if the facility had sufficient volume it may be able to supply the labor and offer to local growers a more turnkey approach to slaughter. Insurance could be handled in a manner similar to the Kentucky State University model: The nonprofit that owns and operates the facility would have a base insurance policy and then require all users to provide evidence of their insurance.

The researchers found no examples of the nonprofit, shared-use model. It was reported by Kevin Elfering of the Minnesota Department of Agriculture that some small-scale animal slaughter facilities were started in his state but ultimately failed. While Elfering believes an insufficient number of birds to assure adequate processing volume was certainly a major problem, he says that problems in other areas – management and sales and marketing among them – also may have come into play. One important aspect of small-animal slaughter facilities in Minnesota, Elfering notes, is the seasonal nature of the industry. While the facility may be very busy for a few weeks during the summer, downtime throughout the majority of the year made it difficult to justify the costs of even a modest slaughter facility. Further, given the sporadic use of these small facilities, operators had difficulties establishing and maintaining proper procedures covering sanitation and health guidelines. It would be far better if these facilities were operated year round with experienced staff.

V. Conclusions

This research indicates that a number of ownership mechanisms can be successfully applied in governing small-animal slaughter facilities. Examples of successful small-animal slaughter facilities were found in both the cooperative and for-profit arenas. Also found was a model whereby a state university owned and operated a small facility. Missing were examples of other types of nonprofits – for example, economic development agencies or planning districts. One state regulator identified an insufficient number of birds for production as well as management and marketing issues as the downfall of several small, not-for-profit facilities in his state.

It also seems apparent that both product differentiation and a broadened product line are important. The successful models discussed here substantiate the importance of developing value-added markets in addition to commodity markets. The small-scale producers interviewed for this study considered differentiating their product from high-volume mass producers and offering high-margin products, such as cooked/ready-to-eat products, to be very important.

Lastly, it's imperative that potential operators of a slaughter facility know well the regulatory environment within which they intend to operate. The cost of USDA inspection is considerable; producers who slaughter 20,000 or less birds should consider USDA retail-exempt status and/or state meat programs where offered. The cost of maintaining a USDA-inspection facility adds considerable financial burden to small-scale producers seeking to reach the break-even point.

Contact Information for Interviewees

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Other information sources

Michigan Turkey Producers Cooperative

Cooperative website: <http://www.miturkey.com>

“Michigan Turkey Producers Cooperative, Preserving a Farming Heritage,” in *Entrepreneurial Agriculture*, published by Michigan’s MarketLine, a project of the Michigan Food and Farming Systems (MIFFS): <http://www.miffsmarketline.org>

Rural Development/USDA: “Saving an Industry: Plant closure leads Michigan growers to form new turkey cooperative.”

<http://www.rurdev.usda.gov/rbs/pub/june00/saving.htm>

Michigan Farm News: “Michigan Turkey Producers Co-Op opens.”
<http://www.michiganfarmbureau.com/farmnews/transform.php?xml=20000315/cover.xml>

Nature’s Premier Organic Chicken, LLC

Company website: <http://www.miturkey.com>

Interview with Anthony J. Pescatore, Extension Faculty, University of Kentucky

Section Three: Assessing Potential Demand for a Small-scale Small-animal Slaughter Facility in North Carolina

I. Introduction

In June and July of 2006, researchers conducted a statewide written survey of farm-based producers with potential interest in accessing a small-animal slaughter facility serving independent growers in North Carolina. The purpose of the survey was to determine the level of existing and potential demand for such a facility, the geographical area or areas where such demand is the greatest, demographic characteristics of the potential users, and to measure the potential economic impact of a facility on independent meat production.

A total of 572 surveys were mailed in hardcopy. (See appendices for full survey.) Recipients included the more than 300 licensed meat handlers in the state, all county offices of the North Carolina Cooperative Extension Service and growers known to be engaged in poultry or egg production. In addition, the Appalachian Sustainable Agriculture Project (ASAP) posted the survey on their website (www.asapconnections.org) and the Carolina Farm Stewardship Association distributed the survey on their livestock listserv. The NCDA&CS also published a notice of the survey in its monthly *Agricultural Review* newsletter. Geographically, 159 surveys were mailed to addresses east of I-95, 161 to addresses west of I-77 and 252 to addresses between those two interstate highways. For the purpose of analysis, these regions are referred to as the western, eastern and central areas of the state. Following the primary data-gathering period, additional surveys were distributed at growers meetings and upon individual request.

A total of 60 surveys were returned to the researchers during the stated timeline for submission. Of that number, 56 respondents were currently involved in or planned to be involved in small-animal meat production. Three respondents said they were only interested in processing facilities for large animals and one was interested in serving as a distributor for farm-based producers.

Analysis of survey responses reveals a number of small, diversified farms located throughout the state with a strong interest in increasing their meat-animal production through use of an inspected slaughter and processing facility. These growers are currently producing very small volumes of meat animals, ranging from chickens and turkeys to rabbits and such niche poultry as quail and ducks. The majority of these producers are selling processed meat from their farms directly to consumers, with a substantial number expressing interest in larger-volume wholesale trade to restaurants and grocery retailers.

II. Types of Production

The majority of respondents reported being involved in more than one kind of animal production: Several were also growing beef cows and swine and many more were involved in both poultry meat and egg production.

Small-animal production by type	
Chicken broilers	36
Eggs	40
Turkey	26
Rabbit	22
Quail	6
Ducks	2

The table above shows responses from those who identified themselves as existing commercial producers as well as those who identified themselves as planning to begin commercial production. The majority of survey respondents (38) are existing businesses engaged in some level of commercial animal production. Of these 38 producers, 24 are currently raising chicken broilers, 27 are producing eggs, 13 are growing turkeys, 15 are raising rabbits and three are raising quail.

Are you a startup or existing business?	
Startup	18
Existing	38
Total	56

Respondents were also asked how long they had been in business. Of 54 respondents, 12 indicated they have not yet started any commercial meat production of small animals, four had been in production less than a year, 21 had been in production from one to five years and 17 had been in production for more than five years.

Among the 18 self-described startup producers, 12 plan to grow chicken broilers, 13 plan to grow turkeys, seven plan to grow rabbits and three plan to grow quail.

Most respondents indicated having little or no access to professional, inspected processing facilities. Twenty-two said they were processing their meat on-farm, while 17 said they were using a state-inspected or USDA-inspected facility. When asked, “Do you have access to a USDA-inspected processing facility for small animals?” 36 of 54 respondents said no. Forty-four of 45 respondents said they would be interested in having access to a USDA-inspected processing facility in their region of the state.

Sixteen respondents said they wanted to run their meat-production business on a full-time basis. Thirty-two said meat production was a part-time occupation. A considerable number (44) of respondents said they wanted to market their product directly to consumers, while nine said they were interested in wholesale distribution. Twenty-nine said they wanted to market to restaurants and 12 indicated a desire to sell to retailers, such as grocery stores. Four respondents, all rabbit growers, said they would prefer to sell their animals directly to a processor. Respondents often expressed an interest in more than one type of marketing activity.

Respondents were asked how far they would be willing to haul their animals for processing. A majority felt that 25 to 50 miles was reasonable, while 12 said they would haul their animals from 51 to 100 miles. Nine said they would haul their animals only up to 25 miles.

How far would you haul your animals for processing?	
Less than 25 miles	9
25-50 miles	32
51-75 miles	4
76-100 miles	8
101-125 miles	2
More than 125 miles	1
Total	56

To measure the level of business preparedness, the survey asked respondents whether or not they currently have a meat-handler’s license. The state of North Carolina requires that all individuals or companies engaged in the distribution of meat products have a license for handling meat on a commercial basis. Having a meat-handler’s license is a strong indication of whether a respondent is distributing their meat beyond their farm in accordance with state regulations. Of 56 respondents, 19 said they currently have a meat-handler’s license.

Questions concerning current and projected animal production were ignored or only partially answered by many survey respondents. In subsequent growers meetings and one-on-one interviews, many growers expressed reservations about divulging their production volumes due to a lack of understanding of state regulations regarding on-farm slaughter and sale of meat. Others felt that making estimates of future production volumes if using an inspected slaughter facility would be purely speculative until such infrastructure was actually in place. For whatever reasons, several respondents who said they were currently in commercial small-animal meat production simply chose not to answer questions concerning production volume.

A total of 30 respondents statewide did report numbers for their current volume of production. One respondent reported current production of 20,000 chickens, but researchers have determined that number is contract poultry production. Backing out that lone outlier brings a total small-animal head count of 25,526. Of that number, 11,200 were poultry from one farm in eastern North Carolina. The remaining 28 respondents – reporting production of a cumulative total of 14,326 animals – averaged 511 animals produced per farm, per year.

Eight producers who reported existing production levels didn’t respond to a question about anticipated future increase in production if given access to an inspected facility. The 22 respondents who reported both existing and estimated future production if provided access to a facility projected a cumulative increase of 173,806 head. A single grower in eastern North Carolina reported that she would increase production by 115,000

animals. Three other producers indicated they would increase production by 10,000 head or more. The remaining 18 producers reported a projected combined annual increase in production of 18,706, for an average of 1,039 animals per respondent.

In addition, seven respondents who reported they were engaged in no commercial meat animal production at this time reported they would be able to produce 9,365 meat animals with access to a slaughter facility. Removing one outlier who reported anticipated production of 7,000 animals, six startup producers reported they would grow 2,365 animals, for an average of 394 animals per farm.

A separation of respondent types is easily identifiable between a small number who have plans for large-scale utilization of a processing facility and a larger number who would choose to remain small for at least the short term, while gradually growing their production output. Among 33 respondents who answered some or all questions concerning current or projected annual production with access to a slaughter facility, seven have plans to process more than 10,000 animals, 10 plan to process from 1,000 to 10,000 and 16 plan to process fewer than 1,000.

An overwhelming number of survey respondents expressed interest in cooperative marketing through a shared-access USDA-inspected small-animal slaughter facility. Likewise, 51 of 52 respondents said they had an interest in attending a meeting to discuss development of such a facility.

Would you be interested in cooperative marketing through a shared-access USDA-inspected small animal slaughter facility?			
		Frequency	Percent
Valid	Yes	44	84.6
	No	8	15.4
	Total	52	
Missing	System	4	
Total		56	

Would you be interested in attending a meeting to discuss future plans for the proposed shared-access USDA-inspected small animal slaughter facility?			
		Frequency	Percent
Valid	Yes	51	98.1
	No	1	1.9
	Total	52	
Missing	System	4	
Total		56	

III. Geographical Determination

A primary purpose of the statewide producer survey conducted in June and July of 2006 was to determine the area of the state with the highest level of unmet demand for small-animal processing facilities, with the understanding that subsequent research activities would largely focus on that identified area.

Respondents' counties of residence stretched from the mountains to the coast, with the largest number of respondents living in Chatham (5), followed by Buncombe, Ashe and Cleveland (4 each). Madison, Yancey, Union and Franklin had three respondents each.

Respondents by County			
Jackson	1	Davie	1
Transylvania	2	Davidson	2
Madison	3	Forsyth	1
Buncombe	4	Randolph	1
Henderson	1	Alamance	1
Yancey	3	Person	1
Ashe	4	Chatham	5
Caldwell	1	Orange	2
Alexander	1	Wake	1
Catawba	2	Franklin	3
Rutherford	1	Greene	2
Cleveland	4	Jones	1
Lincoln	1	New Hanover	1
Gaston	1	Total N.C.	54
Union	3	Upstate S.C.	2
		Total	56

Responses came from 28 counties in the state. A total of 29 producers were located in the western region, 21 in the central region and four in the eastern region. Two other producers were located in upstate South Carolina and are grouped with the western region.

Determining which area had the greatest need for slaughter facilities was contingent upon existing availability of meat-processing services. A cross-tabulation of respondents by geographical region shows that while half of respondents in the central and eastern regions indicated they do have access to a USDA-inspected slaughter facility, 24 of 30 respondents in the western region reported no access to such a facility. The existence of a small-animal meat processor in Pittsboro and the recent opening of the plant in Bladenboro have given central and eastern producers easier access to such facilities as compared to their counterparts in the west.

Do you have access to a USDA-inspected slaughter facility for small animals?				
		Yes	No	Total
Region of residence	Western North Carolina	6	24	30
	Piedmont	10	10	20
	Eastern North Carolina	2	2	4
Total		18	36	54

Several respondents in the eastern and central regions reported having relatively large current levels of production. The reported number of existing meat producers was greatest, however, in the western region of the state.

		Is your business:		Total
		Startup	Existing	
Region of residence	Western North Carolina	9	22	31
	Piedmont	8	13	21
	Eastern North Carolina	1	3	4
Total		18	38	56

Western North Carolina had the largest number of survey respondents who reported not yet having started any meat production (7). However, an equal number of western respondents reported having been in business for more than five years, with another 13 in business from one to five years.

		How long have you been in the meat business?				Total
		Not yet started	Less than one year	One to five years	More than five years	
Region of Residence	Western North Carolina	7	2	13	7	29
	Piedmont	4	2	7	8	21
	Eastern North Carolina	1	0	1	2	4
Total		12	4	21	17	54

The survey response map below shows the geographical range of survey respondents, along with their types of production. In eastern North Carolina, three of the four respondents reported rabbit and poultry production. The central Piedmont had 15 respondents growing only poultry, two growing rabbits only and another four growing both rabbits and poultry. Western North Carolina seemed to have a greater diversity than the other regions, with 15 poultry growers, six rabbit growers and eight growing both rabbits and poultry.

	Poultry	Rabbits	Both
Eastern N.C.	0	1	3
Central Piedmont	15	2	4
Western N.C.	15	6	8

Two-thirds of respondents statewide indicated they would be running their meat business on a part-time basis. The western region had both the highest number expecting to operate full-time and the highest number expecting to operate part-time.

		What type of meat business are you running or looking to run?		Total
		Part-time	Full-time	
Region of residence	Western North Carolina	17	9	26
	Piedmont	14	5	19
	Eastern North Carolina	1	2	3
Total		32	16	48

Twenty-three of 51 respondents reported their current or planned meat business as a seasonal one. The western region had the highest number reporting both a seasonal business (13) and year-round business operations (15).

		Is your current or planned meat business seasonal (producing only a few months a year)?		Total
		Yes	No	
Region of residence	Western North Carolina	13	15	28
	Piedmont	10	9	19
	Eastern North Carolina	0	4	4
Total		23	28	51

Central North Carolina had the highest number of respondents (9) reporting they currently had a meat-handler's license, while the western region had the highest number without a license (24). Three of the four respondents from eastern North Carolina reported having a license.

		Do you currently have a meat handler's license?		Total
		Yes	No	
Region of residence	Western North Carolina	7	24	31
	Piedmont	9	12	21
	Eastern North Carolina	3	1	4
Total		19	37	56

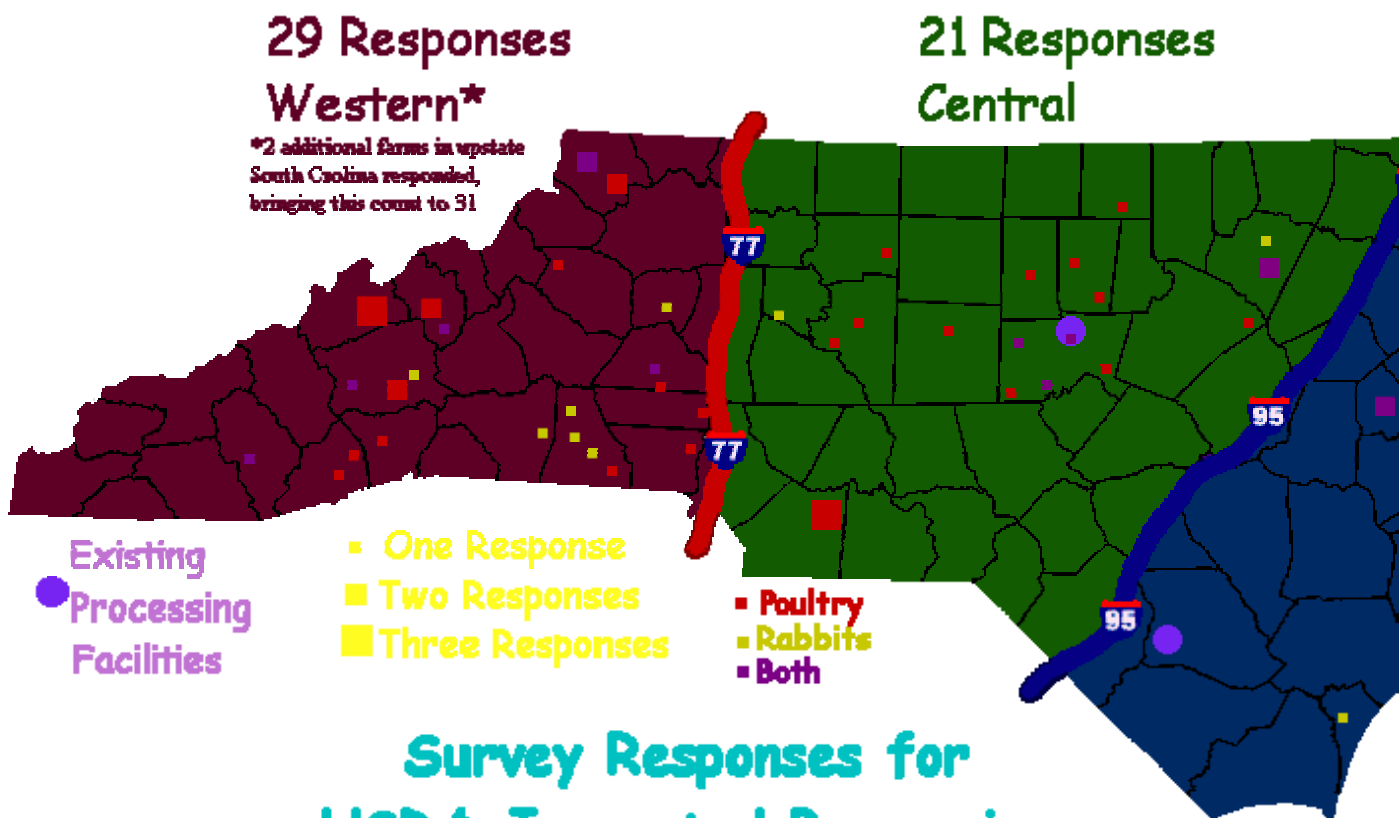
A high percentage of producers with a meat-handler's license in the central and eastern regions is reflective of more well-developed businesses currently accessing USDA-inspected processing facilities. Not surprisingly, in all three regions of the state a majority of those having a meat-handler's license also reported having access to a USDA-inspected slaughter facility for small animals.

Region of residence			Do you currently have a meat handler's license?		Total
			Yes	No	
Western North Carolina					
	Do you have access to a USDA-inspected slaughter facility for small animals?	Yes	4	2	6
		No	3	21	24
Total		7	23	30	
Piedmont	Do you have access to a USDA-inspected slaughter facility for small animals?	Yes	6	4	10
		No	3	7	10
	Total			9	11
Eastern North Carolina	Do you have access to a USDA-inspected slaughter facility for small animals?	Yes	2	0	2
		No	1	1	2
	Total			3	1

IV. Conclusion

By most every measure, the western region of the state clearly has the greatest unmet demand for access to a USDA- or state-inspected small-animal slaughter facility. A caveat to this finding is that the largest single independent producer of poultry in the state is located in eastern North Carolina. The total number of survey respondents from that area was, however, very low.

Subsequent research on producer demographics, site selection and facility planning was therefore conducted for determining the feasibility of establishing a small-animal processing facility in Western North Carolina. Furthermore, geographical placement of survey respondents indicates that optimal site locations would be in the western foothills, between Buncombe County to the west, Iredell County to the east, Ashe County to the north and Cleveland County to the south.



Survey Responses for USDA-Inspected Processing Facility for Small Animals

Section Four: A Profile of Western North Carolina Small-animal Meat Producers

I. Introduction

In response to a statewide written survey of farm-based producers who may have interest in accessing a small-animal slaughter facility serving independent growers, a total of 30 producers from the western region of North Carolina and two who live in upstate South Carolina had returned completed surveys by November 30, 2006. Information in this section is derived from survey responses, telephone interviews and two growers meetings: one held in Marion on September 21, 2006, the other in Shelby on November 9. (See appendices for a summary of the proceedings at these meetings.)

Surveys were solicited through mailings to licensed meat handlers, North Carolina Cooperative Extension county offices and known small-animal producers.

Announcements of the survey were made in the *NCDA&CS Agricultural Review* and through the Internet via the Appalachian Sustainable Agriculture Project and Carolina Farm Stewardship Association. Survey respondents were self-selecting. As such, response rates and data gathered can't be extrapolated to a larger population of small-animal meat producers.

The total number of small-animal meat producers in Western North Carolina is unknown. Based on discussions with identified growers and agricultural service providers, there's a high likelihood that many more growers exist than were identified in the surveys. Very few non-responders, however, are likely to have relatively well-developed commercial meat businesses.

County of Residence		Frequency	Percentage
Valid	Jackson	1	3.1
	Transylvania	2	6.3
	Madison	3	9.4
	Buncombe	4	12.5
	Yancey	3	9.4
	Ashe	4	12.5
	Alexander	1	3.1
	Catawba	2	6.3
	Cleveland	4	12.5
	Gaston	1	3.1
	Lincoln	1	3.1
	Henderson	1	3.1
	Rutherford	1	3.1
	Caldwell	1	3.1
	Haywood	1	3.1
	Total WNC	30	93.8
	Upstate S.C.	2	6.3
Total		32	100.0

These 32 survey respondents reside in 15 WNC counties and in two upstate counties. Four surveys came in from each of Buncombe, Cleveland and Ashe counties and 3 came from both Madison and Yancey counties.

II. Production volume and types

As was the case with those who responded to the statewide survey, WNC respondents report they are producing or plan to produce a wide variety of meat products. Twenty-four of 32 respondents said they were existing meat businesses, with the remainder identifying themselves as startup businesses (i.e., those who plan to go into business). However, on other survey questions, a few self-described startups reported some level of current meat production, while some self-described existing businesses reported no current meat production. In some instances it's clear that self-described existing operations may be currently growing only large animals for meat. Others appear to be currently only involved in egg production. Some startups appear to be producing meat on a limited basis but are not yet deriving enough income to consider themselves as existing businesses.

In interviews and group meetings, some producers expressed reservations about divulging actual production figures due to uncertainty about regulations relevant to the production and sale of meat products. In the tables below, figures on current and anticipated meat production are estimates based on interviews and written survey responses. In cases where producers reported a range of production by number of animals, such as "anywhere from 700 to 900 head," a midpoint average was recorded. In addition, for specific animal-production tables below, survey respondents are identified as existing businesses only if they reported current production volumes for that particular type of animal.

Among the 24 producers who said they were existing meat businesses, 15 reported they are producing both eggs and chicken broilers, representing the largest category of producer. Many of these are producers whose predominant farm business activity is egg production, with only a minimal amount of chicken meat production via on-farm slaughter of spent hens as a byproduct of the core egg business. Several of these egg/spent-hen businesses indicated they would substantially increase their production of broilers for meat if an inspected facility were made available to them.

The second-largest group of current producers is that of rabbit-meat producers. Ten of the 24 existing meat businesses are growing rabbits, with six of them exclusively involved in rabbit production. Researchers were surprised to discover the size of this nascent industry, considered a largely exotic type of meat in mainstream consumer society. Interviews and focus groups with these producers have revealed the existence of a small industry that is hindered by the lack of marketing, organization and processing facilities among growers (see sidebar).

Seven of the 24 existing producers reported growing turkeys.

The following table is a breakdown of all recorded types of small-animal food production by independent growers in the WNC region.

WNC small-animal production by type							
Survey #	Broilers	Eggs	Turkey	Quail	Rabbit	Other	Existing?
41	X	X					X
2	X	X					X
16			X		X		X
58	X	X					X
33	X	X					X
24	X	X					X
14	X	X					X
1	X	X					X
59	X	X					X
19					X		X
53					X		X
54					X		X
52					X		X
10					X		X
55					X		X
9		X					X
61		X	X	X	X	Goats	X
60	X	X			X	Sheep, Beef	X
13	X	X		X	X		X
3	X	X	X				X
8	X	X	X				X
11	X	X	X				X
20	X	X	X				X
21	X	X	X				X
56					X		
23	X	X			X		
4	X	X	X			Ducks	
12	X	X					
31	X	X	X	X		Geese	
46	X		X				
50	X	X	X	X			
26		X			X		
Total=32	21	23	11	4	13	2	24

The following table calculates the volume of existing and anticipated chicken broiler production in the region. Respondents are recorded as existing broiler producers only if they indicated some level of current broiler production.

Western North Carolina independent broiler producers and current and anticipated broiler production				
Survey #	Current production	Anticipated production w/facility access	Existing broiler producer?	Other existing production?
41	50	550	X	Eggs
2	50	50	X	Trout, Large animals
58	25	100	X	Eggs
33	20	120	X	Alpacas
24	60	260	X	Eggs
14	0	1000		Eggs
1	1050	2000	X	Eggs
59	75	1000	X	Eggs
60	0	550		Sheep, Beef
13	100	300	X	Eggs, Rabbits, Quail
3	200	5000	X	Eggs, Turkeys
8	N/A	N/A		Eggs
11	1000	5000	X	Eggs, Turkeys
20	125	125	X	Eggs, Turkeys
21	25	50	X	Eggs, Turkeys
4	50	100	X	Eggs, Turkeys, Ducks
12	0	300		Eggs, Turkeys
31	0	N/A		Eggs, Turkeys, Quail, Geese
46	N/A	N/A		Turkeys
50	0	N/A		Eggs, Turkeys, Quail
23	75	150	X	Eggs, Rabbits
Total=21	2,860	16,655	14	

Only two respondents are currently growing and selling 1,000 or more chicken broilers a year, with only three others reporting production of more than 100 a year. However, when asked about anticipated production if they had reasonable access to a processing facility, five of the existing producers reported they would process and sell 1,000 or more broilers a year.

Rabbit: An Up-and-coming market?

Researchers were surprised to discover that North Carolina has a small but dedicated community of rabbit-meat producers. In the statewide survey, 22 of 60 survey respondents reported growing rabbits for meat. Of that number, nine were exclusively involved with rabbit production for their animal husbandry. In WNC, 13 of 32 survey respondents reported raising rabbits, with a reported current meat production volume of over 3,000 rabbits a year. Most North Carolina rabbit-meat growers appear to be directly marketing their meat to consumers and restaurants. Several of the growers have used JBF Processing in Pittsboro.

There are several reasons why rabbit production is attractive to small, limited-resource farms. Rabbits can be commercially produced for meat, laboratory research or pets. Startup investment costs are low and the land necessary to produce rabbits is minimal. Moreover, they produce large volumes of meat in a short period of time: A single breeding doe can produce through her offspring more than 320 pounds of meat a year – more meat than produced by a cow and requiring less feed, space and equipment.

Rabbit is commonly eaten in France, Italy and other European countries. In an unscientific investigation, a Google search was conducted for all websites containing the words “French restaurant” and “rabbit”; it returned 921,000 hits. According to the Scottish Agricultural College, France is the largest per capita consumer of rabbit, with an average of four kilograms per person per year.

While for most Americans rabbit meat may seem like an exotic source of protein, rabbit growers and recent media reports indicate that rabbit is a growing niche in the meat industry. Domesticated rabbit meat is considered by the USDA to be entirely white meat. It’s high in protein and low in fat, sodium and cholesterol when compared to other common meats, including poultry and beef.

An August 2005 report in the *Milwaukee Journal Sentinel* (see appendices) indicated that rabbit growers and processors in the northeastern United States can’t keep up with demand for rabbit meat from the restaurant trade. An editor at *Food & Wine* magazine referenced in the article attributed the growth to bistro-style restaurants, which focus on rustic fare, including wild game. Another cause of the rise may be Americans’ increased exposure to foreign foods, especially French and Italian cooking, which often features rabbit meat.

In the southeast, Publix Super Markets actively promotes on its website the health and wellness benefits of eating rabbit. The *Milwaukee Journal Sentinel* article reports that Publix carries rabbit at 250 of its 800 supermarkets. (The American Rabbit Breeders Association website, www.arba.net, posts an updated listing of buyers and processors of rabbit in the U.S. and Canada, along with each one’s market assessments and prices paid per pound by live weight.)

Rabbit growers face many of the same difficulties as independent poultry growers: Many have a lack of understanding of small-animal meat-production regulations, lack inspected processing facilities and receive virtually no marketing support.

The USDA doesn’t consider rabbit to be a livestock animal. Inspection services at slaughter houses therefore fall under the category of “voluntary fee for inspection,” meaning processors must pay the USDA an hourly fee for the use of the inspector. In-state transport and sale of rabbit meat, however, does not require USDA inspection.

Perhaps the greatest hurdle for the rabbit-meat industry is the fact that pet rabbits remain popular in this country. As one grower at a focus group held in the course of research for this report said, “We suffer from the Bugs Bunny syndrome.”

The rabbit-pet industry was reportedly worth \$612 million in 2000.

In all, 13 survey respondents reported current or anticipated rabbit-meat production.

WNC independent rabbit producers and current and anticipated rabbit production				
Survey #	Current production	Anticipated production w/facility access	Existing rabbit producer?	Other existing production?
13	200	600	X	Eggs, Chickens, Quail
60	0	500		Eggs, Chickens
16	N/A	N/A		Turkeys
55	1000	10,000	X	
10	700	N/A (700)	X	
52	0	N/A		
54	600	1600	X	
53	N/A	N/A		
19	15	350	X	
61	500	2,500	X	Eggs, Turkeys, Quail, Goats
56	0	800		
23	10	85	X	Eggs, Chickens
26	0	170		Eggs
Total=13	3,025	16,605	7	

There's good reason to believe that current rabbit-meat production figures are underreported. The outlier who reported anticipated production of 10,000 head per year given access to a processing facility is a dedicated rabbit producer who is intent on making a full-time career of it. While this individual may have some difficulty ramping up to this level, there is reason to believe that the figures are attainable with intensive market development. This individual would choose to focus on wholesale distribution for his sales. Survey respondents #52 and #54 reported they would only be interested in selling live rabbits to a processor. The remaining respondents indicated they would most likely sell their rabbit meat directly to restaurants or consumers.

WNC independent turkey producers and current and anticipated turkey production				
Survey #	Current production	Anticipated production w/facility access	Existing turkey producer?	Other existing production?
21	25	45	X	Eggs
20	N/A	N/A		Eggs, Chickens
11	250	1750	X	Eggs, Chickens
8	N/A	N/A		Eggs
3	20	220	X	Chickens
16	0	200		
61	N/A	N/A		Rabbits, Goats
4	50	100	X	Chickens, Ducks
31	N/A	N/A		Eggs, Geese, Quail
46	110	400	X	Chickens
50	N/A	N/A		Eggs, Chickens, Quail
Total=11	455	2,715	6	

Five respondents reported an interest in production of lesser-known or niche types of poultry production. Four of those reported an interest in quail; however, none of them reported any current production. One grower reported current production of 25 ducks a year.

WNC independent producers and current and anticipated niche poultry production				
Survey # and animal type	Current production	Anticipated production w/facility access	Existing niche producer?	Other existing production?
61 - Quail	N/A	1000		Eggs, Rabbits, Turkeys, Goats
13 - Quail	0	N/A		Eggs, Chickens, Rabbits,
50 - Quail	0	N/A		Eggs, Chickens, Turkeys
31 - Quail	N/A	N/A		Chickens, Turkeys, Geese
31 - Geese	N/A	N/A		Chickens, Turkeys, Quail,
4 - Ducks	25	50	X	Eggs, Chickens, Turkeys
Total=6	25	1,050	1	

In all, survey respondents reported current production of 2,860 chicken broilers, 3,025 rabbits, 455 turkeys and 25 ducks.

WNC independent meat production and current and anticipated volume by type			
Meat type	Current production	Anticipated production w/facility access	Anticipated production, existing businesses only
Chicken Broilers	2,860	16,655	14,805
Rabbits	3,025	16,605	15,835
Turkeys	455	2,715	2,515
Other	25	1,050	50
Total head	6,365	37,025	33,205

For forecasting purposes, only the anticipated production figures provided by existing producers should be used. Many growers who plan to begin producing may actually do so – and many current growers who would use the facility probably didn’t return surveys. However, basing anticipated production figures on any but existing producers who reported their production volumes would be largely speculative. Therefore, a potential of 33,205 head of small animals processed at an inspected facility in WNC is a reasonable estimate upon which facility design and estimated costs of development can be based. This represents a five-fold increase from current recorded production volumes. This potential production volume will be used as a basis for discussions of facility management and projected project cash flow elsewhere in this report.

III. Means of marketing

The vast majority (23) of growers in the region are directly marketing their meat to consumers; fourteen report marketing to restaurants. One respondent, an established rabbit grower, said he would like to operate a slaughter plant, and several rabbit growers expressed a preference for selling their animals to a slaughter-facility operator.

Types of marketing activities					
Survey #	Wholesale	Direct to consumer	To restaurants	To retailers	Sell to processor
20				X	
41		X	X	X	
58		X			
33		X			
14	X	X	X		
1	X	X	X		
59		X			
12		X			
54					X
52					X
26		X	X		
60		X	X		
10		X	X		
53					X

19	X	X	X	X	
56					X
23		X	X		
9		X			
21		X			
11	X	X	X	X	
3		X			
16		X			
46		X			
4		X	X		
31		X	X		
50		X	X	X	
13		X	X	X	
61		X	X	X	
Total=28	4	23	14	7	4

Twenty-three producers indicated interest in cooperative marketing through a shared-access USDA-inspected slaughter facility.

Would you be interested in cooperative marketing through a shared-access USDA-inspected small animal slaughter facility?					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Yes	23	71.9	79.3	79.3
	No	6	18.8	20.7	100.0
	Total	29	90.6	100.0	
Missing System		3	9.4		
Total		32	100.0		

IV. Levels of business preparedness

Western North Carolina producers have various degrees of experience in running their businesses. In an effort to accurately gauge potential use of a processing facility, it's useful to measure respondents' length of time in business, whether they have professional certification as meat handlers and whether they operate part-time or full-time businesses.

Thirty producers responded to the question, "How long have you been in the meat business?" The largest number of responses (13) was from one to five years, with eight having been in business for more than five years. Two have been in business less than one year and seven have not yet started their meat businesses.

How long have you been in the meat business (years)?					
		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Not yet started	7	21.9	23.3	23.3
	Less than one year	2	6.3	6.7	30.0
	One to five years	13	40.6	43.3	73.3
	More than five years	8	25.0	26.7	100.0
	Total	30	93.8	100.0	
	Missing System	2	6.3		
	Total	32	100.0		

A total of 27 respondents answered a question regarding whether their meat business was full-time or part-time. Answers were as follows:

What type of business are you looking to run?	
Part-time	17
Full-time	10
No answer	5

One strong indicator of business preparedness is whether or not a producer has a meat-handler's license. Only seven respondents said they currently have one. This number is not surprising, given that small-animal producers in the region have no easy access to a slaughter facility.

Do you currently have a meat handler's license?	
Yes	7
No	25
Total	32

V. Current processing availability

Survey respondents were asked about types of services and facilities they are currently using for their meat-processing needs. Responses were as follows:

What types of services or facilities are you currently using?	
None	15
On-farm processing	18
Inspected facilities	5

Eighteen respondents indicated they are conducting processing activities on their farms. Respondents who indicated they are currently using an inspected facility reported the source as JBF Processing in Pittsboro. Without exception, these growers indicated that the roundtrip travel time to access this plant was unacceptably costly and resulted in stress and high-mortality rates for their animals.

Over half (19) of the respondents said they would be willing to haul their animals between 25 and 50 miles for their processing needs. Nine indicated a willingness to carry their animals further, ranging from 51 to more than 125 miles.

How far would you be willing to haul your animals for processing?			
		Frequency	Percentage
Valid	Less than 25 miles	3	9.4
	25-50 miles	19	59.4
	51-75 miles	2	6.3
	76-100 miles	5	15.6
	101-125 miles	1	3.1
	More than 125 miles	1	3.1
	100.00	1	3.1
Total		32	100

VI. Interest in access to an inspected facility

The very small volume of current small-animal production in Western North Carolina is most likely a direct result of lack of access to inspected processing facilities. Only six producers said they currently have access to a USDA-inspected facility for small animals.

Do you have access to a USDA-inspected slaughter facility for small animals?		
		Frequency
Valid	Yes	6
	No	25
	Total	31
Missing	System	1
Total		32

With the exception of two responders who failed to answer this question, respondents were unanimous in having an interest in accessing a USDA-inspected facility for small animals in the western region of the state.

If your answer was no, or if you have problems accessing such a facility, would you be interested in having access to a USDA-inspected small animal processing facility in your region of the state?		
		Frequency
Valid	Yes	30
	No	0
	Total	30
Missing	System	2
Total		32

VII. Conclusion

Though production remains very small in volume, measurable demand for state- or USDA-inspected processing of poultry and rabbits clearly exists in Western North Carolina. Many growers want access to a facility to increase and professionalize their production and marketing systems.

Growers are spread over a wide geographical area and are producing a variety of poultry and rabbit products. Sales are largely direct to consumers with some wholesale and restaurant trade among more well-established growers.

The establishment of slaughter and processing services for small animals in the region would likely substantially increase production among growers. Accompanying production services should include intensive training, education and market-development support for independent poultry and rabbit-meat growers.

Section Five: Site Selection and Development Options for a Small-scale Small-animal Slaughter Facility in Western North Carolina

I. Introduction

Proper site review and selection is critical to this project's viability. As with all agricultural processing operations, and especially for meat processing, a host of factors must be considered when determining optimal physical locations. Among the most important are identifying locations with adequate infrastructure to meet production and regulatory requirements and that are within reasonable proximity to farm-based producers who wish to access the facility and are located in communities with some level of receptiveness toward hosting an animal slaughter facility.

II. Ideal physical site attributes for a meat-processing facility

Municipal sewer lines are an essential need. Discussions with market operators, engineers and regulatory officials indicate that the long-term viability of abattoirs using septic systems is highly questionable. The existing facility near Pittsboro has had significant difficulties with its septic system, even though it was designed with state support and was intended to meet all regulatory requirements.

Optimally, a facility should have a pretreatment system for contaminated water and be tied into a county or municipal sewer system. Facilities that are accessing a public wastewater treatment plant and that are using 25,000 gallons of water a day are required by the North Carolina Department of Environment and Natural Resources to pretreat their water. With a small plant for poultry or rabbits, it's not likely that water usage would reach that threshold, and the ultimate decision on whether to require pretreatment is up to the local sewer governing authority.

Wells are not a preferred water source; the facility should have access to a county or municipal water system for potable water. It also should have access to all major utilities, including three-phase power, gas or propane and high-speed Internet.

An ideal site location should not create discomfort for nearby businesses and homes. Many meat processors face stiff local resistance to development. Simply put, many communities are uncomfortable with having slaughter facilities as neighbors, regardless of whether the plant presents any real environmental issues. The question of odor is usually the number-one community objection to a plant, but other factors – including a perception of inhumane treatment of animals and the simple fact that animals are being killed for meat – can pose problems in some communities.

Given the relatively low anticipated production volumes for the plant in question – and provided that the facility has adequate water and sewer capacity – very little odor, noise or other environmental nuisances can be expected. Regardless of the specific location, a plant should have a minimum 300-foot buffer from other places of business.

III. Ideal location for a meat-processing facility

Close proximity to the largest number of possible growers is preferred. A majority of producers surveyed wished to haul their animals no more than 50 miles for processing. Producer survey analysis and meetings with WNC producers indicate that the optimal site location would be in the western foothills, between Buncombe County to the west, Iredell

County to the east, Ashe County to the north and Cleveland County to the south. This area encompasses the counties of Alexander, Caldwell, Catawba, Burke and McDowell and includes parts of Iredell, Lincoln, Rutherford and Wilkes. This area also provides relatively easy access for those growers who expressed an interest in significant expansion of their production volumes if given access to a facility.

IV. Options for site selection and development

While North Carolina is home to one of the largest poultry industries in the nation, the vast majority of its commercial poultry production is operated by a very few large, vertically integrated companies. At the time of this research project's inception, only one facility in the state was providing USDA-inspected slaughter services to independent small-animal meat producers. One other facility, located in Bladen County, opened in 2006 and is serving independent chicken growers, with a minimum processing run of 350 birds. No processing facilities exist serving independent small-animal producers in the 30 counties west of I-77. There are also no nearby available USDA-inspected facilities in adjacent states.

Researchers have investigated several possible routes to providing inspected processing services for independent small-animal growers in Western North Carolina. For a project seeking to serve the largest possible number of independent meat producers in a targeted geographical region, closely related factors that must be taken into consideration in the site-selection process include identifying the project's core leadership and collaborative organizations and determining the most viable options for the project's legal structure. In regards to site selection, some of the most obvious paths toward development are discussed below:

- Identify an existing meat processor willing to expand services to include independent small-animal growers.
- Develop a small-animal processing facility using private equity investment.
- Develop a small pilot plant located on state-owned land – possibly located at an agricultural research station – and managed by a state entity.
- Develop a pilot plant owned and operated by a local government or nonprofit.

Development Option One: Identify an existing meat processor willing to expand services to include independent poultry and rabbit growers.

In the search for increased processing capacity, researchers investigated the possibility that an existing private-sector large-animal meat processor could step forward to meet the producer demand for small-animal slaughter and processing in the western part of the state. An expansion of an existing plant could prove much less expensive and would provide a market-based solution to the need for small-animal processing.

Some precedent for this development model exists. In 2005, the Williamsburg Packing Company in Kingstree, South Carolina opted to include poultry slaughter and processing capacity to their existing large-animal slaughterhouse. According to Emile DeFelice, a former coordinator for the Carolina Farm Stewardship Association in South Carolina, this facility is providing processing to at least two independent growers. In addition, at least two existing large-animal processors in the eastern Piedmont region of North Carolina have expressed some interest in poultry slaughter.

In contrast to the nearly complete absence of small-animal processing facilities, North Carolina has a number of privately owned USDA-inspected abattoirs able to process large animals – such as beef, pork and goats – for small independent producers. Researchers therefore proceeded to contact existing large-animal processors to discuss whether they could develop services for independent growers. The NCDA&CS Meat and Poultry Inspection Division lists the following seven large-animal slaughterhouses in the targeted region of the western foothills:

Caldwell Meat Processing Company 3726 Goodson Rd. Maiden, NC 28650 (828) 428-8833 Lincoln County	Catawba Meat Processing 6167 Hudson Chapel Rd. Catawba, NC 28609 (828) 241-2787 Catawba County
Crawley's Abattoir 3632 Crawley Higgins Ave. Morganton, NC 28655 (828) 584-6356 Burke County	Mays Meats Foodservice 541 E. Main Ave. Taylorsville, NC 28681 (828) 632.2034 info@maysmeats.com sales@maysmeats.com Alexander County
Price's Custom Meat Cutting & Abattoir 8450 Price Meat Cutting Rd. Hickory, NC 28602 (828) 397-5151 Burke County	Thomas Brothers Meat Processing 347 Thomas St. North Wilkesboro, NC 28659 (336) 667-1346 Wilkes County
Wells, Jenkins & Wells Abattoir 167 Rollins Rd. Forest City, NC 28043. (828) 245-5544 Rutherford County	

Source: NCDA&CS Meat and Poultry website

Researchers spoke with all but two of the above processors concerning the possibility of expanding into small-animal processing. (Telephone numbers for two facilities, Catawba Meat Processing and Price's Custom Meat Cutting and Abattoir, were disconnected.)

Managers at Caldwell, Mays, Thomas Brothers and Wells, Jenkins & Wells all said they had no interest in expanding into poultry or small-animal processing. Only Crawley's Abattoir expressed interest. This facility is located in the countryside outside of Morganton and is primarily involved in swine processing. The owner, Mr. Her, informed researchers that his facility is 30 to 40 years old and in good working order, but is not on water or sewer lines and is using a septic system and well water. Given that new permits would have to be issued to process poultry, and the documented problems with older septic systems, researchers do not recommend this site.

Large-animal processors had various reasons for being reluctant to enter the poultry and small-animal processing business. According to processors and agricultural marketing personnel, several of these facilities are increasing their levels of custom commercial processing of large animals in response to growing consumer demand. This appears to stem from rising demand for ethnic meats – such as halal-certified beef, lamb and goat – as well as a rising demand for locally grown all-natural beef and pork. Expanding and

improving existing production therefore makes more business sense to these processors than starting an entirely new type of processing.

Research was also conducted on whether or not an existing vertically integrated poultry processing facility might accommodate independent growers. In most cases – especially with very large processing facilities that typically slaughter more than 100,000 birds per day – the prospect of slaughtering for independent growers is simply not feasible given the scale of their systems. Facilities at Case Farms in Morganton and Tyson Foods in Wilkesboro are not equipped to accommodate small-volume independent producers.

Joyce Foods in the Winston-Salem area has recently begun slaughtering and processing poultry on a small line able to handle small volumes of birds. Joyce Foods currently processes poultry grown under contract on a few farms in Chatham County and markets under the Ashley Farms and Poulet Rouge Fermier brands. The company also commercially processes rabbit and game birds. (Details of a discussion with company president Ron Joyce are found in Section Two, “Secondary Research.”)

As was the case with most poultry-industry professionals, Joyce was very concerned about the difficulty of maintaining quality control and sanitation when dealing with birds or animals from multiple independent growers. Without stringent, unified protocols for flock management, he is reluctant to consider slaughter and processing for small independent growers. Another concern expressed was the ability of very small farms to adequately schedule delivery of animals for processing. Joyce did, however, express interest in sourcing rabbits from growers who could guarantee quality and production volumes.

Contact: Ron Joyce, Owner
Joyce Foods, Inc.
4787 Kinnamon Rd.
Winston-Salem, NC 27103
(336) 766-9900
info@joycefoods.com

Researchers also contacted Brian Cuddy of Elite Foods, located in Troy. In 2006, and as discussed in the “Secondary Research” section, Elite opened a new processing facility to handle up to 60,000 all-natural chickens and turkeys a week. Cuddy informed researchers by e-mail that Elite’s processing system is vertically integrated with contract farmers in the area, and that they wouldn’t be able to provide slaughtering services for independent growers.

Development Option One: Conclusion

There is insufficient interest from existing large-animal slaughterhouses in the area to propose an expansion of an existing abattoir to accommodate independent small-animal growers. At the one existing slaughterhouse that expressed interest, lack of sewer access likely precludes its expansion into small-animal slaughter services. Communication with Joyce Foods, Elite Foods and other poultry-industry specialists confirms that poultry businesses using the vertically integrated model are highly unlikely to open their facilities to independently grown poultry. Some opportunity may exist for growers to sell live rabbits and exotic game birds to a processor, but growers would not likely retain possession of the meat for distribution or direct marketing from farmer to consumer.

Development Option Two: Develop a small-animal processing facility using private equity investment.

Private equity investment in a processing facility is challenging for several reasons. The most likely individuals to invest in a facility of this nature are those who are themselves involved in small-animal production. In Western North Carolina, very few, if any, of the identified growers have investment capital for this type of endeavor. Anne Fanatico's 2003 *Small-Scale Poultry Processing* report (see appendices) estimated the cost of building a small inspected facility at a little under \$500,000, not including land-acquisition costs.

Given the limited financial resources of growers – and the lack of water and sewer access to farms – it remains highly unlikely that producers can collectively invest the necessary resources to succeed. NCDA&CS personnel report that in the past several years some independent poultry growers have requested support for design and development of inspected on-farm processing facilities. One of these was Andy Youngblood, who in the 1990s built Rose Hill Poultry Processing on his farm just west of Pittsboro. Rose Hill is now JBF Processing. As discussed in Section Two, this facility lacks access to county sewer, water and three-phase electricity, resulting in significant challenges to its operations. Other farmers who previously expressed interest in building their own facilities tended to drop their plans once cost estimates and physical infrastructure needs were established.

Another equity route would be to entice a private investor to build and operate an inspected facility on a commercial basis. This possibility, however, seems remote given the current limited production capacity of the region. Investment would presumably be contingent upon whether a facility of this nature can make a profit serving independent producers in the region. An income projection for the facility, based upon producer survey responses, shows the project generating gross annual revenues of \$79,987 in its first stage of operation. Costs of a standalone operation – including utilities, labor and management – would substantially exceed this amount. This doesn't even take into consideration the need to recoup the costs of original facility development.

Researchers did have communications with poultry processors located elsewhere in the country that have made confidential enquiries about establishing processing facilities in Western North Carolina. One is a small processor that provides services to independent growers in exchange for a percentage of the animals processed. While this company presents a model that could meet the demands of independent growers, there was little evidence to indicate any firm commitment to relocating to the region. In addition, that organization's significant investment in an existing facility in its current location appears to preclude the capital requirements for establishing a new plant at this time.

Another processor with interest in the region is a vertically integrated company that's a subsidiary of one of the 100 largest food companies in the U.S. This company processes approximately 200,000 chickens a week, grown under contract on 30 farms. Production is 100 percent vertically integrated from hatchery to plant. This company has made enquiries about the viability of establishing all-natural poultry production in the WNC region. In a telephone interview, however, the company's president expressed doubts about whether their processing facilities could accommodate independently operated

farms. His point of view is that quality and consistency are produced in a scientific manner that can best be controlled through vertically integrated operations.

Development Option Two: Conclusion

Prospects for private equity investment to build and operate a small-animal slaughter and processing facility in Western North Carolina appear slim. But certainly, growers interested in a facility for processing may be able to contribute a portion of development or operational costs through paid access to a project of this nature.

Development Option Three: Develop a small pilot plant located on state-owned land – possibly located at an agricultural research station – and managed by a state entity.

In the early stages of this project, researchers envisioned the possibility of an existing agricultural research station hosting a pilot plant for small-animal processing. This general concept has a great deal of appeal from the standpoint of providing training and educational support from agricultural service providers and of engaging established organizations with experience in development projects.

The following three agricultural research stations are located in the western region of the state:

Upper Mountain Research Station
Les Miller, Superintendent
8004 NC Hwy. 88 E
Laurel Springs, NC 28644-8631
(336) 982-2501 (p)
(336) 982-4142 (f)

Mountain Research Station
Bill Teague, Superintendent
265 Test Farm Rd.
Waynesville, NC 28786-4016
(828) 456-3943 (p)
(828) 452-3201 (f)

Mountain Horticultural Crops Research Station
Denny Thompson, Superintendent
74 Research Dr.
Fletcher, North Carolina 28732-7729
(828) 684-7197 (p)
(828) 684-7503 (f)

None of these facilities are located in the optimal targeted region of the western foothills. The Upper Mountain Research Station and the Mountain Research Station are clearly too far away from too many key growers to be suitable.

There are several positive factors associated with the Mountain Horticultural Crops Research Station in Fletcher (MHCRS). MHCRS is also home to the Mountain Horticultural Crops Research and Extension Center, which houses 50 faculty and staff from the NCSU College of Agriculture and Life Sciences and the College of Natural Resources. Staff conducts research and extension programs for the departments of entomology, forestry, horticulture, plant pathology, soil science and zoology. The center

also houses the administrative offices for the North Carolina Cooperative Extension Service West and Southwest districts.

MHCRS superintendent Denny Thompson reported in December 2006 that the station has recently acquired an additional 100 acres of land and is considering new program activity. Thompson indicated that preliminary discussions have begun with NCSU researchers – including Dr. Nancy Creamer of the Center for Environmental Farming Systems (CEFS) and Dr. Jeanine Davis, director of the Specialty Crops Program – to develop programs supporting sustainable agriculture on small farms. Program activity wouldn't be restricted to horticulture and would be similar to activities taking place at the CEFS research facility at the Cherry Farm station near Goldsboro.

MHCRS's physical infrastructure also appears adequate. The station has access to municipal water and sewer from the Metropolitan Sewerage District of Buncombe County and is located away from homes and businesses.

MHCRS is not, however, in an ideal geographical location to meet the needs of many producers who expressed interest in accessing a slaughter facility. Growers in Ashe, Caldwell, Lincoln, Catawba and Alexander counties would have difficulty reaching the facility in a timely manner.

Another negative factor may be the fact that the land is owned and managed by a state entity. According to Kent Yelverton, director of the Property and Construction Division of NCDA&CS, building and bid requirements for new construction on state-owned land can dramatically increase costs of development. Also, as discussed in the legal considerations section of this report, the Umstead Act may be a hindrance to activities associated with private commercial businesses on state land.

Development Option Three: Conclusion

A pilot plant located at the Mountain Horticultural Crops Research Station could function as a viable training and educational project and would benefit from being housed in an established agricultural research station. Some growers in the region, however, would lack easy access to this location. Development costs would likely be much higher than if the project were developed on land other than state-owned property. This location is therefore not a recommended site for a project of this nature if other viable options can be identified.

Development Option Four: Develop a pilot plant owned and operated by a local government or nonprofit.

With private equity investment unlikely and no research stations in the ideal geographical area, researchers considered the viability of working with a local government or nonprofit organization to develop the facility. In July and August 2006, the lead researcher contacted county economic developers throughout the targeted geographical region, enquiring about suitable locations for a small-scale poultry slaughter facility.

In many cases, developers were highly reluctant to encourage the project in their counties, largely due to environmental concerns and public perception about slaughter facilities. One county developer asserted that the time for agricultural projects in his county had passed and that their development strategy is focused on building up retail locations and new home sites.

No existing industrial buildings, such as abandoned textile factories, were identified that could viably host a small-scale small-animal slaughter facility. Those buildings that were identified as vacant or available were many times larger than needed and were either for sale or lease by private companies.

In late July 2006, the researcher contacted Chuck Abernathy, who serves as both the McDowell county manager and executive director of the McDowell Economic Development Association, Inc. Abernathy arranged a meeting on August 4 with himself, county extension director Daniel Smith and county extension livestock agent Mario DeLuca. Following a presentation on the feasibility study, Smith informed researchers that McDowell County was actively interested in hosting a slaughter facility to serve independent growers in the region.

The county owns a swath of largely undeveloped land on N.C. 226 south of Marion, the county seat. Smith indicated that McDowell County might be amenable to donating some of that land for development of a small pilot plant. Subsequent conference calls and meetings – including a conversation with county commission chairman Andy Webb and a growers meeting in Marion on September 21 – have confirmed and reinforced county leaders' high level of interest in hosting a small-scale small-animal slaughter facility. In December 2006, Abernathy confirmed that the county would have interest in leasing land to the project for \$1 per year.

In January 2007, Abernathy gave researchers a tour of proposed sites for a facility. One site is at a former shooting range located on county land just behind a state minimum-security prison. The site has easy access to U.S. Hwy. 226 and is approximately a half mile from I-40. Another former shooting range was also shown as an option, and is located approximately a quarter of a mile from the other site.

Several factors make the first site attractive for the project. The land has close access to water and sewer systems, is located away from homes and businesses and is geographically situated for reasonable access by the large majority of farms interested in using a slaughter facility.

Divisions of county and city public works departments, including one of Marion's two wastewater treatment plants, are located nearby. According to the city of Marion's website (www.marionnc.org), the plant can treat up to three million gallons a day and is currently operating at one-third or less of its permitted capacity.

The site is also located near a former landfill that is targeted for development as a methane gas entrapment facility. That project is actively seeking partnerships with area businesses to provide methane gas as an alternative heating fuel or for electricity generation. Stan Steury, a developer for the methane gas project employed with the Appalachian State University Energy Office, contacted the lead researcher and encouraged collaboration between a small slaughter facility and the methane gas project.

Finally, a compelling factor in support of this location is the recent development of a small group of farmers in the county who are focused on new strategies to support small-scale sustainable farming in McDowell County. This organization, the McDowell Farmers Alliance, has plans for formal establishment in 2007 as a 501(c)3 nonprofit and has submitted a grant request for organizational development to Southern SARE

(Sustainable Agriculture Research and Education). Stated goals of the grant request include developing value-added processing of meat, including further processing of red meats and a small-animal slaughter facility. The county's extension office has a livestock agent, Mario DeLuca, who is familiar with small-scale independent poultry and rabbit production and can play a support role for the McDowell Farmers Alliance.

The Marion site has a number of strengths, but some important questions also must be considered in its regard. Smith has stated that his office doesn't have the personnel resources to devote to this project; and while the county has an interest in donating land, it doesn't have an interest in owning or operating a small-scale small-animal pilot plant. Furthermore, program activity toward training and educating producers would face a logistical challenge, in that the site isn't located at an existing agricultural research facility. Significant planning for facility management and program activity is required for this site and is discussed in Section Eleven, "Facility and Program Management Considerations."

Finally, the two possible sites shown to researchers in January 2007 were former firing ranges. According to environmental regulations, those sites would require remediation activities to remove lead from the soil before construction could begin. Estimates for this remediation have been discussed as being in the \$20,000 to \$30,000 range.

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Manager, McDowell County
PO Box 1289
25 South Garden St.
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(828) 652-9391 (p)
(828) 652-8775 (f)

Daniel Smith, County Extension Director
60 E Court St.
Marion, NC 28752
(828) 652-8104 (p)
(828) 652-8104 (f)
Daniel_Smith@ncsu.edu

McDowell Farmers Alliance
c/o Meredith and Casey McKissick
Crooked Creek Farm
1623 Mt. Hebron Rd.
Old Fort, NC 28762
(828) 668-9896
mere75@earthlink.net

Development Option Four: Conclusion

A pilot plant located in Marion has many strong qualities that can lead to its success in serving the needs of small-animal meat producers in Western North Carolina. Land is possibly available at no cost and has access to physical infrastructure necessary to host the facility. Marion is ideally located to give reasonable access to slaughter services for growers throughout the region. Remaining questions involve determining an organization or organizations to own and operate the facility. Development of training and educational

programs would entail bringing on-board service providers from outside McDowell County.

V. Conclusion

Options relating to site selection for a small-animal slaughter facility in Western North Carolina are limited by a lack of interest on the part of existing large-animal facilities to process poultry and rabbits and the absence of private equity investment for project development. These factors strongly suggest that a facility of this nature should be managed as a nonprofit entity that in addition to providing the service of processing animals for meat offers training and education for producers.

Based on a review of possible site locations – and considering preferable management and organization issues – researchers recommend a site in Marion as the most viable of available choices. A second location, at the Mountain Horticultural Crops Research Station, located in Fletcher in south Buncombe County, is deemed potentially viable but is not considered an optimal site.

Section Six: Assessing the Market Potential for Locally Produced Poultry and Rabbit Meat in Western North Carolina

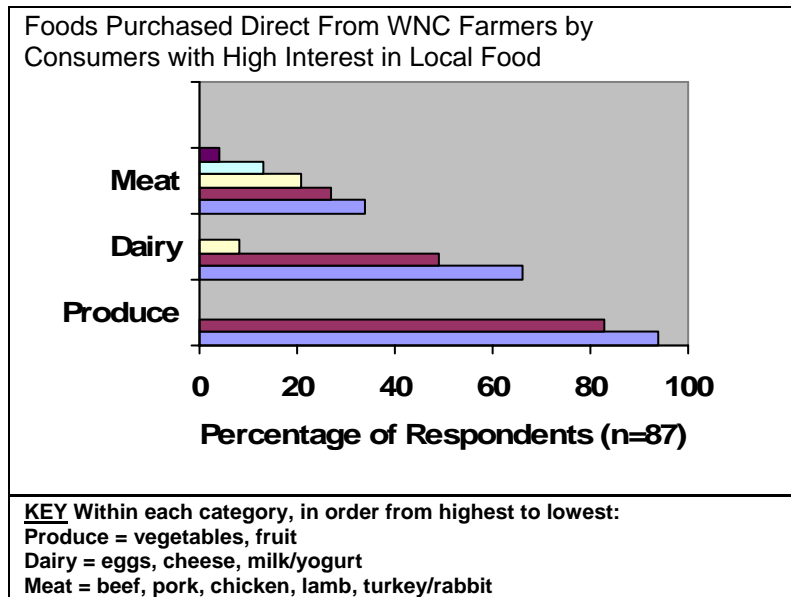
I. Introduction

Nationwide, the amount of food purchased direct from farmers has increased steadily since the early 1990s. Direct sales from producers to consumers were \$812.2 million in 2002 when the most recent USDA Census of Agriculture was released, up from \$404.1 million in 1992. And in the decade between 1994 and 2004, the number of farmers markets counted by the USDA increased 111 percent to a total of 3,700 nationwide.¹ These trends offer some evidence of rising demand for locally grown food across the country.

Such trends are echoed in Western North Carolina, where direct sales from farmers increased 20 percent between the 1997 and 2002 agricultural censuses, and the number of farmers tailgate markets in the region now stands at more than three dozen.² Market research commissioned by the Appalachian Sustainable Agriculture Project (ASAP) – a nonprofit organization working to support family farms in Western North Carolina – provides further evidence that consumers and businesses in the region care about where their food comes from and how it's grown. This research included both consumer and organizational surveys. (See the end of this section for the full surveys.)

II. Food purchasing: Attitudes vs. behavior

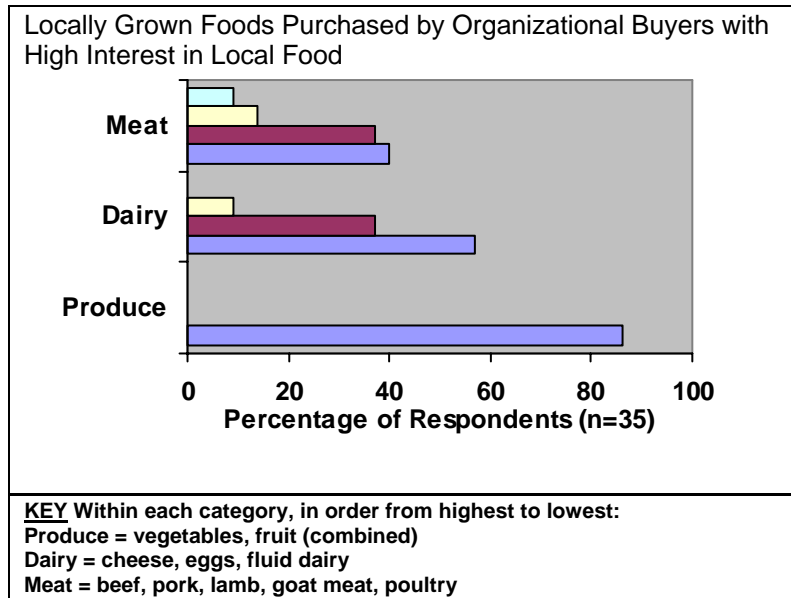
High demand for local food must be interpreted with caution, however, since attitudes about local food don't always correlate directly with food purchasing behaviors. Many other issues – convenience, price and quality, for example – also influence how and where consumers and organizations obtain their food. The complex relationships between these issues are poorly understood.



In seeking to clarify the types of local food actually purchased by WNC consumers, ASAP initiated an online survey of consumers thought to be highly motivated to buy locally grown food.³ Results from that survey confirm that produce is purchased directly

from farmers somewhat more frequently than most categories of dairy products and much more frequently than all categories of meat.

Similar data from a survey of organizational buyers also shows higher rates of purchasing local produce than all other categories of food.



To a large extent, different purchasing rates for different types of food reflect reduced infrastructure requirements for moving produce from farm to market as compared to meat and dairy products. Meat and dairy products require processing, for example, as well as refrigerated transportation and storage. These and other issues make it more difficult for meat producers to meet consumer demand for their products.

III. Regional production and consumption

Production and consumption estimates provide a framework for examining the potential to increase local consumption of locally produced chicken and other poultry products. Information about poultry and rabbit-meat production in WNC⁴ comes primarily from two sources: the USDA Census of Agriculture and the NCDA&CS. The statewide survey conducted for this study supplements data from these two government sources by examining North Carolina meat producers' interest in and potential usage of an independent, government-inspected small-animal processing facility. (See Sections Three and Four of this report).

Food consumption data is provided by the Economic Research Service of the USDA in various formats. Per capita consumption estimates from the Food Guide Pyramid Servings data set are useful in comparing production and consumption figures side-by-side because they include adjustments for losses in weight that occur along the chain from farm to retailer/food service to consumer.⁵ These adjustments are particularly relevant for meat products because of significant changes from farm weight to retail weight to cooked weight.

In North Carolina in 2002, approximately 4.4 billion pounds of broilers⁶ were produced at an average price of \$0.31 per pound (live weight equivalent). Just over 100 million pounds of other types of chickens were produced in the state that year, at an average price of \$0.07 per pound. With approximately 14 percent of statewide broiler production and 6 percent of other chicken production occurring in WNC, regional totals for broiler and other chicken production can be estimated at 616 million pounds and 6 million pounds, respectively.⁷ Using average statewide prices, the combined value of broiler and chicken production in WNC is estimated at just over \$191 million.

Approximately 1.2 billion pounds of turkeys were produced in the state in 2002, at an average price of \$0.37 per pound (live weight equivalent).⁸ With only 132 turkeys reported sold in the region in 2002, turkey production in WNC can be estimated at 3,366 pounds or \$1,245. Other types of poultry and rabbit meat were reportedly produced in somewhat larger quantities than turkeys in 2002, but no price or pound data is available for those. Table 1 highlights the number of farms producing each type of poultry and rabbit meat in WNC in 2002, including the number of animals in inventory and the number sold that year. The figures reported in the table are based on county-level data from the USDA Census of Agriculture and may underestimate the actual number of animals produced or sold. The USDA’s practice of suppressing data to protect confidentiality in counties where production is by only one or two farmers, along with difficulty measuring production by very small producers, makes the accuracy of the numbers for turkey, other poultry and rabbit questionable.

WNC farms producing poultry or rabbit meat				
	Number of farms with animal in inventory	Number of farms selling animal	Number of Animals Sold	Estimated Pounds Produced
Broilers	336	336	102.7 million	616 million
Turkey	61	18	132	3,366
Rabbit	61	18	342	n/a
Ducks	121	28	338	n/a
Geese, quail and other poultry	207	42	261	n/a

Sources: 2002 USDA Agricultural Census; National Agricultural Statistic Service, USDA

Residents of WNC eat an estimated 33 million pounds of chicken a year, equal to approximately 98.4 million pounds in farm weight. This means that WNC residents only consume 16 percent as much chicken as is produced in WNC. It’s worth noting that more than 90 percent of all broilers produced in WNC are in Wilkes County, where Tyson Foods operates three chicken-processing facilities. The broiler industry is vertically integrated, which means that many of the producers in Wilkes County are likely contract growers for Tyson.

Approximately 8.5 million pounds of turkey are consumed in the region each year, adjusted for losses, equal to approximately 17 million pounds in farm weight. This far exceeds the amount of turkey currently produced in the region, estimated at 3,366 pounds

in 2002 (see Table 1). Other types of poultry meat (i.e., duck, quail, pheasant) are not consumed regularly in large enough quantities in the region to carry regional consumption estimates. In fact, those products are generally consumed only in restaurants or other types of food-service establishments.

IV. Market types

Potential buyers of locally grown rabbit and poultry meat can be roughly divided into two groups. The direct-sales category used in the USDA Census of Agriculture – including sales through farmers tailgate markets, Community Supported Agriculture (CSA) programs, roadside stands, u-pick and other on-farm retail operations – covers any type of sale direct from producer to consumer with no middleman involved. These markets hold the greatest potential for farmers in terms of profitability, but are also limited in scale by their nature.

The second group is larger-scale markets, which includes retail stores, restaurants and other organizations that sell or serve food in larger quantities than individuals purchase for home consumption. Also included in this group are wholesalers who may buy from producers in large quantities for resale to restaurants, retailers and institutions. Larger-scale markets have potential for a greater volume of sales, though generally at lower margins.

This section considers the potential of these two distinct categories of buyers as markets for locally raised and produced poultry and rabbit meat. Two sources of data are used (see survey instruments at the end of this section). One is an online survey for consumers regarding various types of food they purchase or would like to purchase direct from farmers. The second is a written questionnaire mailed to larger-scale buyers.

Both surveys were targeted to potential buyers with established high interest in buying locally grown foods. In other words, survey results may not be generalized to the entire population of WNC, but may be representative of demand by individuals and organizations in the region who have a confirmed interest in buying locally grown food. Included with a discussion of demand for each survey group is some assessment of the region-wide potential for demand within the larger population.

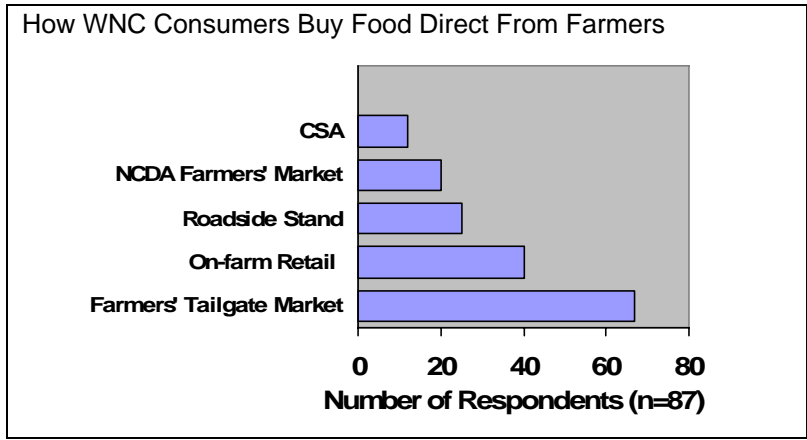
V. Direct markets and their potential - consumer research⁹

This research consisted of telephone surveys with randomly selected individuals in Buncombe, Henderson and Madison counties, conducted in 2000 and repeated in 2004. Highlights include:

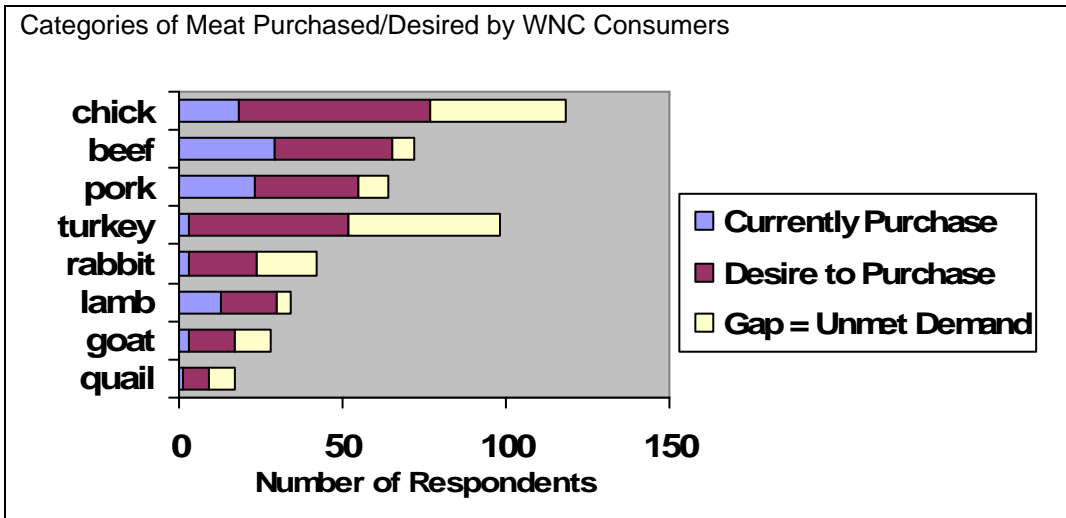
- Survey respondents reported preferences for local food based on health and taste advantages compared to non-local food.
- Three quarters of survey respondents indicated that when locally produced foods cost a little more, they're worth the extra cost.
- Survey respondents spent a greater percentage of their monthly budget on locally grown food in 2004 than in 2000. In 2004, 27 percent of residents surveyed spent more than 10 percent of their monthly expenditures on locally grown food, whereas only 20 percent spent that much in 2000.

- The study concluded that 82 percent of respondents indicated they would buy more locally produced food if it were labeled as local.

The online survey for consumers was completed by 87 individuals over a period of three weeks. Survey respondents were individuals who currently purchase local food direct from farmers in a variety of ways.



Of 15 categories of foods, fruits and vegetables had the highest total demand by consumers completing the survey, with over 90 percent of respondents either currently buying or desiring to buy fruits and vegetables direct from farmers in WNC. Within the meat categories, chicken had the highest total demand, followed by beef, pork and turkey. Of any type of meat, the largest unmet demand was observed for locally raised turkey, followed by chicken and rabbit.



In terms of quantity, the 87 consumers completing the online survey indicated they would buy an average of 8.5 pounds per month of locally produced poultry or rabbit meat direct from producers if it were available. The annual total estimated amount purchased by these 87 consumers, then, would be 8,760 pounds. In dollars, consumers estimated they

might spend \$26 a month, on average, buying locally produced poultry or rabbit meat direct from producers. Accordingly, the annual total estimated spending by these 87 consumers would be around \$27,000.

A region-wide estimate of potential demand by consumers for local poultry and rabbit meat can be generated by estimating a percentage of the population that has high interest in buying locally grown food and applying average spending (\$26 per month) and purchasing amounts (8.5 lbs per month) from the online survey sample to the larger population. While the 2004 consumer research described earlier in this section concluded that 82 percent of consumers in Buncombe, Henderson and Madison counties would buy more locally grown food if it were labeled as local, the online survey sample may be more similar to the small group of consumers from that research (12 percent) who reported spending greater than 20 percent of their total food expenditure on locally grown food.

If 12 percent of consumers in Buncombe, Henderson and Madison counties spent an average of \$26 per month buying local poultry and rabbit meat for their households, their total annual spending on those products would be about \$5 million. Given that this level of spending represents almost 10 percent of the roughly \$52.9 million per year spent on food by those households in 2004, it represents a high potential. In other words, as an indicator of demand it suggests that absolute demand for local poultry and rabbit meat is high.

But in practical terms, that level of purchasing would require a more fully developed distribution system for local foods than that which currently exists in WNC. In fact, comparing the \$5 million figure against current measures of spending on local food – most notably, the \$3.1 million in direct sales of all categories of farm products for all 23 counties of WNC in 2002¹⁰ – confirms that the figure is not realistic given current market conditions.

The absence of local processing facilities is one reason for the large gap between interest in local poultry and rabbit meat and actually purchasing it, but the data suggest at least two others. One is convenience. Of the consumers with high interest in buying local poultry and rabbit meat, 57 percent named a grocery store or co-op as the preferred way to obtain those products. Those types of venues may hold strong potential as markets for local producers, but they don't offer the same opportunities for price premiums as direct sales.

Another factor that is likely to mediate interest in purchasing local poultry and rabbit meat and actual purchasing behavior is price. Close to 25 percent of consumers responding to the online survey indicated they would be willing to pay no more than 5 percent more for locally produced poultry or rabbit meat than the amount they're paying for non-local product. What this means is that – given the likely price differential between the two – many of the buyers interested in local poultry and rabbit will continue to buy non-local product despite their preferences.

There are certainly other issues – awareness about where to find local food or seasonality of tailgate markets in the region, for example – affecting the relationship between consumer interest and purchasing behavior. As the local food system continues to evolve in WNC and attention is given to marketing, distribution and related food-system issues,

producers may look forward to real demand for direct sales far higher than the \$3.1 million level from 2002.

VI. Larger-scale markets and their potential

Telephone, mail and e-mail surveys to various organizations in Western North Carolina that serve or sell food indicate that many businesses are interested in buying locally grown food, partly in response to high perceived demand by consumers:¹¹

- 23 of 42 (55 percent) chefs and restaurant owners completing a phone survey expressed high interest in purchasing locally grown food for their businesses
- 15 of 24 (63 percent) child nutrition directors representing public school districts in the region expressed high interest in sourcing food from WNC farmers
- 15 of 24 (63 percent) WNC summer camp directors completing an online survey indicated high interest in serving local food to campers
- 7 of 17 (41 percent) college and university food service directors in the region expressed interest in sourcing food from local farmers
- 10 of 11 (91 percent) hospital food service directors completing a phone survey expressed high interest in incorporating locally grown food into hospital food service

Double-digit growth in the number of restaurants and food stores (39 and 64 percent, respectively) listed in ASAP's *Local Food Guide* from 2002 to 2006 further suggests that businesses in the region are aware of strong consumer demand for local food and farm products.¹²

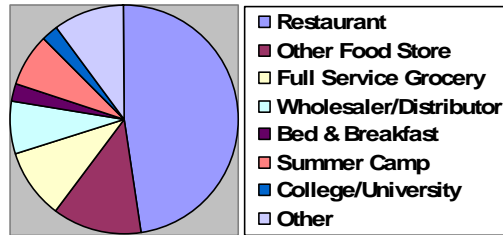
The written questionnaire for larger-scale buyers was mailed to 69 organizations currently listed in the *Local Food Guide* and another 33 organizations believed to have high interest in buying locally grown foods based on their responses to market surveys conducted by ASAP in the past year.¹³ A total of 40 organizations completed a survey, for a response rate of 39 percent. Selected characteristics of survey respondents are provided in the next table.

The small number of organizations within each category makes it difficult to draw conclusions separately for each type of organization. However, differences between the three largest groups – restaurants, food stores and wholesaler/distributors – will be noted wherever possible. The high proportion of restaurants among survey respondents indicates the high number of restaurants on the survey recipient list rather than a disproportionately high response rate from that group.

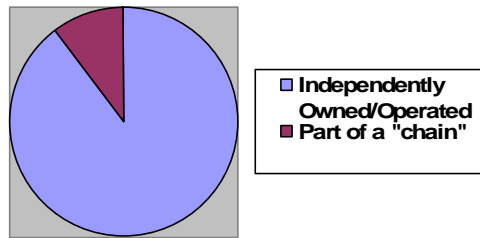
In the survey, respondents were asked to name which types of poultry or rabbit-meat products they currently purchase and in what quantities. Of the nearly 200,000 pounds of poultry and rabbit meat purchased each year by buyers completing a survey, none was sourced locally with any regularity. Three different buyers reported sourcing some poultry or rabbit meat from local producers on an occasional or seasonal basis. The table on the next page details the types and estimated quantities of poultry and rabbit meat purchased by organizations completing this survey.

Selected Characteristics of Survey Respondents

Type of Organization



Structure of Organization



Current poultry and rabbit meat purchased by survey respondents (n=40)

Type of poultry or rabbit meat	Range of amounts purchased (lbs/month)	Total quantity purchased (lbs/month, annualized)	Number of purchasing organizations
Whole chicken broilers	6 - 1,088	24,528	14
Boneless chicken breasts	6 - 2,000	70,392	25
Other chicken cuts	7 - 2,080	68,424	15
Whole turkey	20 - 200*	27,615	11
Turkey cuts	30 - 300	7,560	7
Whole rabbit	20*	170	6
Whole quail	5 - 25*	90	5
Other poultry products	10 - 20	600	5
Total		199,379	

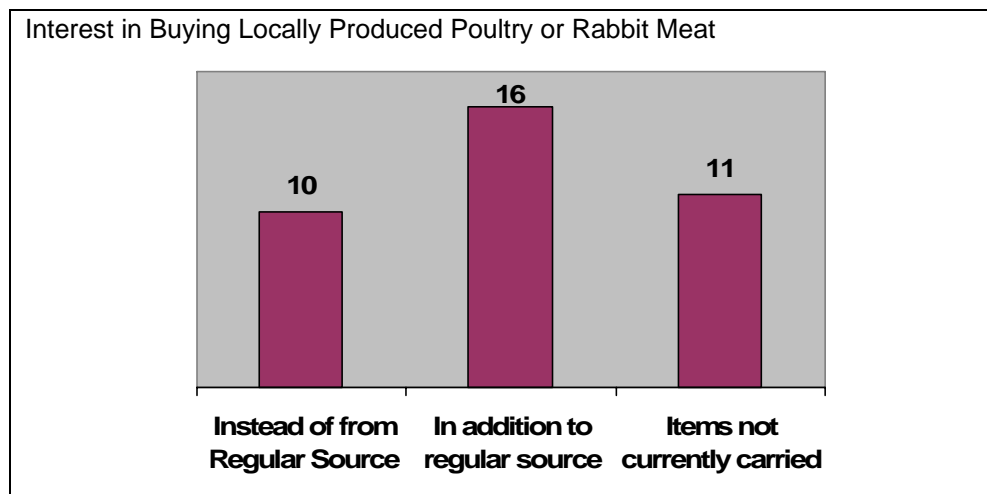
*Seasonal item

Restaurants and food stores reported buying each type of poultry and rabbit meat listed. As expected, fewer types of organizations (only restaurants and food stores) reported buying rabbit than any other type of meat on the list.

In terms of interest in locally produced meat, two-thirds of all buyers completing a survey indicated high interest (7 to 10 on a scale of 1 to 10) in purchasing poultry and rabbit meat from WNC producers. Several different types of interest may be distinguished:

- Current purchasers of poultry/rabbit who are interested in obtaining poultry and rabbit meat from local producers *in addition* to their regular source(s)
- Current purchasers of poultry/rabbit who are interested in obtaining poultry and rabbit meat from local producers *instead of* from their regular source(s)
- Organizations that haven't historically purchased poultry or rabbit-meat products but would begin to offer them if they become available from a local source

The figure below illustrates the relative size of each group and shows that a sizable portion of purchasing could be from buyers offering new products. Examples include a produce wholesaler interested in offering locally produced fresh meats, specialty food-store operators adding poultry to their fruit and vegetable offerings and restaurants interested in specialty products like pasture-raised or antibiotic/hormone-free chickens.



Demand for locally produced poultry and rabbit meat by organizations in WNC is primarily for meat processed in a USDA-inspected facility rather than in an NCDA-inspected facility. In response to a question asking which type of inspection would be required, only three respondents indicated that the stricter state-level inspection process and sanitary guidelines would be necessary. Those guidelines would limit the sale and distribution of meat to within the state of North Carolina, whereas the USDA-inspection criteria would allow for sale across state lines.

Data highlighting organizations' perceptions of barriers and motivators regarding buying locally produced poultry and rabbit meat are useful in evaluating the relationship between *interest* in local food and local food purchasing *behavior*. Organizations were asked to rate various barriers to buying locally produced poultry and rabbit meat on a scale of 1 to 10, with a higher rating representing a greater barrier.

Barriers to purchasing local poultry/rabbit	Average rating
Coordinating purchase and delivery	6.2
Price	6.0
Obtaining sufficient local product supply	5.8
Need for standard packaging/product size	5.4
Food safety concerns	4.3
Quality of food	3.9
Contracts/company policies	3.7

Similarly, they were asked to rate motivators or reasons why they might be interested in purchasing locally produced poultry or rabbit meat. In this case, higher ratings indicate more compelling reasons.

Compelling reasons for purchasing local poultry/rabbit	Average rating
Supporting local farmers/the local economy	9.5
Higher-quality food	8.9
Producer practices (i.e., naturally or humanely raised animals)	8.6
Meeting demand from customers for local food	7.8
Differentiation from competitors	6.9

Understanding the influence of these barriers and motivators on organizational practices is critical in evaluating the potential of various local markets for locally produced poultry and rabbit meat. For example, if local poultry is available but the quality is lacking or the price is too high, even the most interested organizations may not buy it.

Restaurants

Of the 19 restaurants completing a survey, 14 (74 percent) indicated high interest in buying locally produced rabbit and poultry. Together, these restaurants spend around \$2.2 million on food each year. As an estimate, poultry and rabbit purchases might represent between \$330,000 and \$660,000 annually (15 to 30 percent of total food spending). About half of the restaurants completing a survey were interested in buying from a regional facility rather than from their regular source, and half were interested in supplementing purchases from their regular source with purchases from a regional facility. A rough way to account for that is to say that the amount of local poultry and rabbit purchased by these restaurants might range from \$165,000 to \$330,000 per year. Another way to calculate that range is to examine the extent to which restaurants that are highly motivated to buy local food buy produce, which is the type of local food most readily available and easily accessible in WNC. The following table shows the range of responses by restaurants with high interest in local food to a question asking about their current local produce purchases, which vary from 10 to 85 percent.

Local produce purchases as a percentage of total produce purchases for restaurants with high interest in local food	Number of respondents
10% - 20%	1
21% - 30%	4
31% - 40%	3
41% - 50%	3
51% - 60%	2
61% - 70%	1
71% - 80%	1
81% - 90%	1

It's important to note that these ranges were reported by restaurants completing a survey and have not been verified by the researcher. It's possible that some respondents misinterpreted the question and reported the average amount of local produce they purchase *during the growing season* instead of during the whole year. It's also possible that some buyers purchased produce they believed to be local but which was actually grown in another region and sold locally. Given that fruit and vegetable production in WNC is considerably limited by the length of the growing season, it's unlikely that any restaurant purchased more than 40 percent of its produce locally as a yearly average. Nevertheless, these numbers are the best available to indicate how much locally grown produce highly motivated restaurants typically buy.

The following table uses the same percentage ranges from the one above to calculate the amount of poultry and rabbit meat interested restaurants completing this survey might buy. In other words, it shows a dollar-value range for each level of spending, assuming the 14 interested restaurants would all buy local poultry/rabbit meat at a particular level. A built-in assumption is that it would be possible for the restaurants to obtain locally produced poultry and rabbit meat easily and consistently, meeting their requirements for price and quality. In this sense, as with the consumer-demand potential discussed earlier, these dollar ranges represent a potential that may be achievable given a series of improvements in local food-system infrastructure. As such, they should be interpreted with caution and not used as actual expected or projected spending given a single intervention, such as the establishment of a local poultry/rabbit processing facility.

Potential spending on locally produced poultry and rabbit meat by interested restaurants with a high commitment to local food	Potential range*
10% - 20%	\$49,500 to \$99,000
21% - 30%	\$103,950 to \$148,500
31% - 40%	\$153,450 to \$198,000
41% - 50%	\$202,950 to \$247,500
51% - 60%	\$252,450 to \$297,000
61% - 70%	\$301,950 to \$346,500
71% - 80%	\$351,450 to \$396,000
81% - 90%	\$400,950 to \$445,500

*For these calculations, a midpoint of the \$330,000 to \$660,000 in estimated poultry/rabbit purchases was used.

To the extent that other restaurants in the region have high interest in purchasing locally grown food, the potential amount of locally produced poultry and rabbit meat purchased

by restaurants in WNC could of course be higher. The number of restaurants completing this survey is too small to make a meaningful projection to other interested restaurants in the region. However, the estimated 724 full-service restaurants in WNC spent an estimated \$137.5 million on food in 2002.¹⁴ Using this category of restaurant – in which customers are seated and order from a menu – controls for some of the variables that most influence restaurant food-purchasing behavior. A subset of those restaurants is likely to have high interest in locally grown food, though additional barriers involving awareness about where to obtain local food are also likely compared to the study group of restaurants already familiar with or enrolled in ASAP’s local-food campaign.

Food Stores

The four full-scale groceries completing the survey currently carry whole chickens and chicken cuts and whole turkeys and turkey cuts. Two of the four stores also carry rabbit, and each store carries at least one other type of poultry (duck, Cornish hens, quail, etc.). Two of the four stores expressed high interest in purchasing locally produced poultry and rabbit meat and two did not. Neither store with high interest was interested in replacing its current source for chicken and turkey. Rather, their interest was in buying from the regional facility in addition to buying from a regular source. The expectation is that purchasing will vary according to issues like quality, availability and the opportunity to buy niche or specialty products. The grocery store market is also extremely price-sensitive, with none of the full-service groceries indicating they would be willing to pay more for local product than they are currently paying for non-local product.

Specialty food stores include co-ops, fruit and vegetable markets, meat and cheese markets and similar types of stores that offer only a partial line of products. Five specialty food stores completed the survey, with three of the five expressing high interest in buying local poultry or rabbit meat. Many specialty food stores don’t already sell fresh meats, so barriers for this group may be considered higher than for other types of organizational buyers. In other words, carrying fresh meats may introduce a new set of challenges and considerations for store owners.

Wholesalers

Two of the three wholesaler/distributors surveyed expressed high interest in purchasing locally produced poultry and rabbit meat. The potential with these two buyers is large, though obstacles are significant. One is a produce supplier that would be a newcomer in the business of distributing meats and the other is a large corporate entity with concerns about issues such as contracts and company policies in addition to the other organizational barriers described previously. For both potential buyers, the expectation is that they will source local products in addition to non-local products. Neither buyer indicated a willingness to pay more for locally produced poultry or rabbit meat compared to non-local product.

VII. Pricing

Pricing is at least as important as quantity in evaluating the demand for locally raised and produced poultry. For farmers, local markets only make sense if they offer a premium compared to other markets. By their nature, they offer some level of premium because of reduced transportation costs and opportunities to sell directly to consumers or organizational buyers. However, given extremely low price spreads for commercially processed chickens,¹⁵ the extent to which individual and organizational buyers are willing

to pay more for locally produced poultry and rabbit is important in considering the viability of those markets for regional producers.

In both the online consumer survey and the organizational survey, most buyers reported they would be willing to pay more for locally produced poultry and rabbit than the amount they are currently paying for non-local product, 84 and 59 percent for consumers and organizational buyers, respectively. However, of those who said they would be willing to pay more for locally produced poultry and rabbit, the average amounts of how much more were only 10 to 15 percent for consumers and 5 to 15 percent for organizational buyers. Many of the largest potential markets were also the least likely to pay a premium for locally produced poultry and rabbit meat. The few organizational buyers who indicated they might be willing to pay 15 to 25 percent more than they are currently paying for local poultry and rabbit meat were in the restaurant category.

Organizational buyers vary widely in the prices they pay for poultry and rabbit meat. Listed below is the limited data available on prices paid by survey respondents for various types of poultry and rabbit meat.

Prices paid by organizational buyers		
	Range (\$/lb)	Average (\$/lb)
Rabbit	2 - 5.50	3.79
Turkey cuts	1 - 4	2.15
Whole turkey	.99 - 6.5	2.23
Boneless chicken breasts	1.5 - 5	3
Whole broilers	1.25 - 2	1.83

It's worth noting that many of the reasons for buying locally produced poultry and rabbit meat given high ratings by the consumer group are the same types of reasons that have helped organic products earn significant premiums compared to conventional products in recent years. While price premiums are unlikely to persist indefinitely, organic prices for many vegetables have consistently been around 100 percent higher than conventional prices over the past decade.¹⁶

Reasons for buying local poultry or rabbit meat direct from producers	Average rating
Higher-quality, fresher food	9.3
Supporting local farmers/local economy	9.3
Environmental benefits	9.0
Healthy eating	8.9
Humanely raised animals	8.8

Scale: 1 = not important; 10 = very important

To the extent that locally produced poultry and rabbit meat maintain desirable characteristics, higher premiums from the consumer market can be expected. It is also worth noting that while the average price premium among consumer survey respondents was 10 to 15 percent, the range was wider than for organizational buyers, with nearly a quarter of consumers indicating they would pay 20 percent higher than what they are currently paying for non-local poultry and rabbit meat.

VIII. Conclusions and implications

Evaluating the market potential for locally raised and produced poultry and rabbit-meat products means considering three separate but interrelated areas: production, consumption and market characteristics, of which pricing is one. This report has used various surveys and published production and consumption statistics to describe that market potential.

Overall, it appears that, given improved opportunities for profitability, direct sales to consumers hold the greatest potential for locally produced rabbit and poultry meat. Expanded direct sales also allow for a good match between supply and demand for locally raised poultry and rabbit meat in WNC. Good infrastructure exists within at least part of the region for these types of sales, given the extensive network of farmers' tailgate markets and the growing network of Community Supported Agriculture programs. Additional infrastructure needs for selling within the current system include refrigerated transportation and storage.

For larger markets, attention needs to be given to overcoming barriers inherent in selling to those markets – including dealing with distribution and quantity issues and addressing the concerns of many large-scale buyers regarding product quality, appearance and safety. Given the cautious interest expressed by surveyed organizations, without attention to those issues such an endeavor will likely be unsuccessful. Among larger markets, the restaurant sector likely holds the greatest potential for producers, given higher potential margins and the interest by many restaurants in offering local poultry and rabbit instead of, rather than in addition to, poultry and rabbit meat from other sources.

Survey for Prospective Meat Buyers

This questionnaire is designed for restaurants, retail food stores, institutions and wholesalers who might be buyers of poultry and rabbit meat products slaughtered in a USDA-inspected small animal processing facility located in WNC. While most questions pertain to poultry and rabbit meat purchases, there are a few other questions relevant to all restaurants, retail food stores and wholesalers in the region. **Please take a few minutes to complete the survey and return it in the enclosed self-addressed stamped envelope by September 30, 2006.**

The first few questions are to help us understand what type of food business or food service you operate.

1. Which of the following best describes your business?
 - Wholesaler
 - Supermarket or grocery (offer a full range of foods)
 - Other food store (includes health food stores, co-op food stores, food stores specializing in one or two product lines such as produce or meats, ethnic food stores, etc.)
 - Restaurant
 - Hospital
 - Summer camp
 - College/University
 - Other: _____
2. Is your business: a chain a franchise independently owned and operated
3. How many locations do you have? If a wholesaler, how many retail locations do you distribute to?
 - 1 2-10 11-50 51-100
 - Over 100
4. How do you typically obtain food for your business? Please check all that apply and if possible provide the company name.
 - From a wholesaler or distributor. *Company name:* _____
 - From a company-owned centralized warehouse
(*Warehouse supplied by:* _____)
 - From a farmer or farmers' cooperative: _____
 - From farmers' market or farm stand: _____
 - Other - *please explain:* _____

The next set of questions pertains only to purchases of poultry and rabbit meat.

5. What type of poultry or rabbit meat products **do you purchase now?**

Next to each category below please indicate pounds per month purchased. Please also indicate the proportion locally produced that you purchase. Sometimes it is difficult to know

if what you are purchasing is locally produced or not. If you're not sure, count it as non-local.

None (*Skip to question 9*)

Whole Chicken Broilers: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Boneless Chicken Breasts: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Other Chicken Cuts: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Whole Turkey: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Turkey Cuts: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Whole Rabbit: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Whole Quail: _____ lbs/month
_____ %
_____ %

Local

Non-Local

Other _____: _____ lbs/month
_____ %
_____ %

Local

Non-Local

6. Are any of the poultry or rabbit meat products you purchase seasonal (you only buy them a few months in the year)?

Yes

No

- Not interested in buying poultry or rabbit meat.
- Interested in buying poultry and rabbit meat from the regional facility instead of buying from my regular source.
- Interested in buying poultry and rabbit meat from the regional facility in addition to buying from my regular source.
- Interested in buying items from the facility that I don't currently carry. Please specify the items/quantities you might be interested in carrying with as much detail as possible (Whole turkeys in November, humanely raised whole chickens, etc.):

- Other -- please explain:

11. *Whether or not you are interested*, what would you expect to be the biggest challenges related to buying locally-produced rabbit or poultry meat products? Please rate each item below on a scale from 1 to 10. “1” means you think the issue would not be much of a problem and “10” means you think it would be a significant problem.

	<u>Rating</u>
Obtaining sufficient local product supply	_____
Coordinating purchase/delivery	_____
Quality of food	_____
Price	_____
Food safety concerns	_____
Need for standard packaging/product size	_____
Contracts/company policies	_____

12. If you were to buy poultry or rabbit meat from the regional facility, what would you consider to be the most compelling reasons for doing so? Rate each item using a 1 to 10 scale. “1” means the reason would not motivate you and “10” means the reason would motivate you a lot.

	<u>Rating</u>
Supporting local farmers/ the local economy	_____
Higher quality food	_____
Differentiation from competitors	_____
Meeting demand from customers for local food	_____
Producer practices – naturally/humanely raised animals	_____
Other reasons (specify) _____	_____

13. How much would you be willing to pay for locally produced poultry and rabbit meat products?

- about the same amount I’m paying for non-local product
- 5% - 15% more than I’m currently paying
- 15% - 25% more than I’m currently paying
- Other amount: _____
- Not applicable/Not sure

14. On average, how much do you currently pay for:

- Whole Chicken Broilers : price/lb _____
- Boneless Chicken Breasts : price/lb _____
- Whole Turkey: price/lb _____
- Turkey Cuts: price/lb _____
- Whole Rabbit: price/lb _____
- Whole Quail: price/lb _____

Other rabbit/poultry products _____ : price/lb _____

As with any financial information you share in this survey, this information will be kept completely confidential. The information will only be used by ASAP in combination with figures from other organizations to determine the market for locally produced poultry and rabbit meat in the region.

The next two questions ask about customer identification of locally grown food.

15. In your opinion, how interested do you think your customers would be in a label that indicates product source for poultry and rabbit meat products?

- Not interested
- Somewhat interested
- Very interested
- Do not know

16. The *Appalachian Grown*TM label has been developed as a way to help consumers, retailers, and wholesalers distinguish and identify agricultural products grown or raised on farms in western North Carolina and the southern Appalachian Mountains. If you were to purchase locally produced poultry and rabbit meat would you be interested in *Appalachian Grown* labeling and/or advertising?

- Yes No

comments:

The final set of questions asks about different categories of food products purchased by your establishment.

17. This question asks you to do three things.

- In Column 1, place a check mark next to the categories of food purchased by your establishment *that are grown or produced locally*.
- In Column 2, please estimate the percent of total purchases your local purchases represent for each category of food that you checked in Column 1.
- In Column 3, please indicate how much of that product you would like to source locally if it was available from a reliable, high-quality source.

Column 1:
Products
Sourced

Column 2:
Estimated

Column 3:
Desired

<u>Locally</u>	<u>% local</u>	<u>% local</u>
___ beef	___	___
___ pork	___	___
___ lamb	___	___
___ goat meat	___	___
___ fluid dairy	___	___
___ cheese	___	___
___ butter	___	___
___ eggs	___	___
___ fish	___	___
___ produce	___	___

18. Please estimate the amount you typically spend on food for your establishment each month.

\$ _____

As with any financial information you share in this survey, this information will be kept completely confidential. The information will only be used by ASAP in combination with figures from other organizations to get a sense of the size and scale of the market for local food in the region.

19. Who are your customers, or what type of customers are you targeting?

Check all that apply.

- Local residents
 Tourists/Visitors
 Restaurants
 Bed & Breakfasts
 Food stores
 Institutions (i.e., public schools, colleges, hospitals, etc)
 Other (specify): _____

20. Do you have any other questions or comments about this survey or its content?

21. May we contact you for additional information or to clarify any of your responses?

- Yes
 No

Survey completed by:

Name: _____

Organization: _____

Address: _____

City: _____ State: _____
Zip: _____
County of Residence: _____
Phone: (____) _____
Email Address _____

Thank you for your time and interest. Please return your completed questionnaire by September 30 (or as soon as possible thereafter) in the enclosed pre-stamped envelope.

Online Survey for Consumers Regarding Interest in Locally Produced Meats

This questionnaire is designed for consumers living in western North Carolina (WNC). These questions pertain only to purchases of various types of food for *home consumption*, not food purchased for a business or any other type of organization. The questions also ask about food purchased *directly from farmers*. While we recognize and appreciate that there are many opportunities to obtain locally grown food through restaurants and food stores in the region, we are interested here only in direct sales from farmers to consumers. Thanks for your interest!

1. Which categories of food (if any) do you currently purchase directly from farmers?
 - beef chicken pork lamb
 - rabbit turkey goat meat fluid dairy
 - cheese butter eggs fish
 - fruit vegetables
2. Where do you typically get them?
 - Farmers tailgate market
 - WNC Farmers Market
 - Community Supported Agriculture (CSA) program
 - Roadside stand
 - On-farm retail store/stand
 - Other : _____
3. Which categories of food are you not currently purchasing directly from WNC farmers but *have interest in* purchasing directly from WNC farmers?
 - beef poultry pork lamb
 - rabbit turkey goat meat fluid dairy
 - cheese butter eggs fish
 - fruits vegetables

Not all of those items are readily available directly from farmers in this region. The NC Department of Agriculture and Consumer Services is currently assessing the need for a regional USDA-inspected small animal processing facility, which would make locally raised and produced poultry and rabbit meat available.

4. If you have interest in purchasing poultry or rabbit meat directly from regional farmers, please estimate how much you might spend in a typical month on those products.
 - less than \$10
 - between \$10 and \$30
 - between \$30 and \$60
 - more than \$60
 - Other : _____
5. What would be your preferred way for obtaining locally produced poultry or rabbit meat?

- Farmers tailgate market
- WNC Farmers Market
- Community Supported Agriculture (CSA) program
- Roadside stand
- On-farm retail store/stand
- Retail food store/grocery store
- Other : _____

Thanks for taking the time to answer these questions. Check out the online version of ASAP's Local Food Guide (www.appalachiangrown.org) to find a source for many of the food products mentioned in this survey.

Section Seven: Building Design Options and Construction Specifications for a Small-scale Small-animal Processing Facility

I. Introduction

Design considerations for a suitable small-scale small-animal processing facility must take into account the realities of measured producer demand, projections for future production growth and the limited resources that can be expected for the project's development. This section assesses different design options and highlights crucial specifications needed to meet regulatory guidelines and optimize plant efficiency. In addition, researchers propose an estimated cost range for the facility's construction.

II. Technical assistance

The NCDA&CS Property and Construction Division (P&C) has an engineering section that provides helpful technical assistance for agricultural development projects in the state. Support is provided in the planning, design and construction of capital improvements and repair and renovation projects. P&C provides preparation of plant schematics free of charge. A guidebook titled "USDA/NCDA&CS Facility Guidelines for Meat Processing Plants" can be obtained from NCDA&CS/MPID. This then serves as the beginning point for planning the construction of a poultry processing plant in North Carolina. NCDA&CS provides a document titled "Acceptable Meat and Poultry Equipment Guidelines" that can be used as a guide in purchasing processing equipment.

USDA previously published a comprehensive construction and layout guide for small and large meat processing plants. Last published in 1984, *U.S. Inspected Meat and Poultry Packing Plants - A Guide to Construction and Layout* has been available for review in PDF form on the Internet. It's also sometimes available in hardcopy from used-book dealers at www.abebooks.com. Its publication has been discontinued because USDA no longer makes prior approval decisions. It now relies on the company, through the company's HACCP plan, to produce a product under sanitary conditions.

P&C has provided the following sample plan checklist for a plant review to assure it's meeting necessary guidelines for sanitation and safety. Such verbal specifications typically accompany a drawing of the facility.

SPECIFICATIONS for S103 Sample Plan

BUILDING CONSTRUCTION

1. Finishes of floors, walls, and ceilings are smooth and flat, and constructed of impervious materials.
2. All exposed wood surfaces are painted with a good grade of oil or approved plastic paint or treated with hot linseed oil or a clear wood sealer.
3. All window and door openings and other openings that would admit flies are provided with effective insect screens or fly chaser fans. Also, effective means are provided to preclude rodents from entering buildings.
4. All doors of toilet rooms and dressing rooms and toilet room vestibules are solid, self-closing, and completely fill the openings, except as otherwise shown on the drawings.
5. Doors are of rust-resistant metal, or in case of cooler doors of wood construction, they are clad on both sides with heavy rust-resistant metal and any seams are soldered or welded.

- The juncture of metal clad door jambs and the walls are effectively sealed with a flexible sealing compound.
6. Suitable coves to facilitate sanitary maintenance are provided at junctions between walls and floors.

WATER SUPPLY, PLUMBING, DRAINAGE, AND REFRIGERATION

1. The potable water supply is obtained from an approved water supply, and is effectively protected from pollution.
2. An ample supply of hot water at adequate temperature and under suitable pressure and properly distributed throughout the plant is provided. Hose connections for supplying hot and cold water are provided in the various workrooms at the approximate locations shown on the drawings.
3. Each lavatory (hand-washing basin) is supplied with hot and cold water delivered through a combination mixing faucet with outlet about 12 inches above the rim of the bowl, liquid soap and an adequate supply of sanitary towels in suitable dispensers, and a suitable receptacle for used towels. Lavatories are pedal operated.
4. Sanitary Drinking fountains are provided. If placed adjoining a laboratory, they are located high enough to avoid splash from the laboratory.
5. All equipment wasting water is installed so that waste water is delivered into the drainage system without flowing over the floor.
6. Effective means are taken to prevent back-siphonage of liquids into the potable water supply or steam lines. Back-siphonage of liquids into potable water supply is prevented by placing water lines to equipment, such as cooking or soaking vats and the like, higher than the highest level reached by liquids in the vats, or by other acceptable means such as mechanical anti-siphonage devices.
7. The sewage from the plant is discharged into the xxxxxxxx Sewer System (an approved sewage system).
8. Toilet soil lines are separate from house drainage lines to a point outside of the building.
9. Floor drainage lines inside building are of metal or approved plastic and have an inside diameter of at least 4 inches, properly vented to the outside air to a point above the roof. Each drainage inlet is equipped with a deep seal trap. All floor drains and vent lines are provided with facilities to exclude rodents.
10. Heat to dispel steam and vapor is provided in unrefrigerated workrooms.
11. Refrigerated rooms are maintained at a temperature not higher than 50 degrees F.
12. The coolers are refrigerated by means of overhead refrigerating units with insulated drip pans beneath them, properly connected to the drainage system.

EQUIPMENT

1. All equipment is of rust-resistant metal or approved plastic and located in a convenient and accessible manner for cleaning and inspection.
2. Containers are constructed of stainless steel or Technical Services Division approved plastics.
3. A suitable method is provided for handling returned product for inspection.
4. Employees are provided with a rust-resistant metal clothes bar for hanging clothes, with a rust-resistant metal shelf 16 inches above the floor for footwear. The dressing room will be used by not more than XXXX men and xxxx women.
5. The inspector is provided with a cabinet equipped with a lock for the storage of supplies.
6. A suitable room or space for the storage of supplies, such as wrapping paper, cartons, and containers, is provided in a convenient location. All supplies are placed on racks 12 inches above the floor.

OPERATIONS

1. Condemned and inedible material is transferred in suitable water-tight metal containers, (and removed from the plant to an outside rendering plant for disposal.) Suitable facilities for washing the containers used for such material are provided.
2. Sausage material grinding and chopping, bacon slicing, boning, cutting, and similar operations are conducted in departments having a temperature of approximately 50 degrees F. or the processing room and equipment is cleaned every four hours. Such departments are not located in areas where hanging carcasses or exposed products are stored.

GENERAL

1. Each workroom is provided with artificial lighting of good quality having an intensity of at least 30 foot candles for general illumination and at least 50 foot candles at places where inspections are performed and where plant operations require establishment employees to prepare products of any character to meet the inspection requirements.
2. Outer clothing of employees, shroud cloths, etc., are laundered at an outside laundry.
3. Roadways on the premises adjoining the plant are hard surfaced and have a binder of asphalt, tar, or cement, and are properly drained. Vehicular loading and unloading areas adjacent to the plant are concrete paved and properly drained.
4. Wall-mounted cabinets, electrical control panels, and the like have a clear space of at least 1 inch between the mounted units and the wall, or sealed to the wall with a flexible waterproof sealing compound.
5. Artificial light fixtures in rooms where exposed meat is handled or processed are provided with a protective shield of suitable nonshattering material such as Plexiglas so as to preclude contamination of product with broken glass.

III. Recommendations

Based on measured levels of producer demand and potential availability of funding, researchers recommend development of a slaughter and processing facility for multiple species of poultry and rabbits. P&C engineers worked closely with researchers to identify the approximate size of a desired small-scale poultry and rabbit processing facility that would meet state and federal regulatory guidelines. Given the measured demand from producers in the Western North Carolina region, a recommendation is for a facility design with a maximum daily throughput of not more than 1,000 chickens a day and that can be efficiently operated with a minimal number of workers. Optimally, the design should be scalable to allow for future expansion and to meet regulatory requirements for every level of inspection.

Engineers provided three possible plans. Design Option One, measuring 44' by 24', was originally conceived for a processor interested in building a small slaughter facility on his own farm. The compact nature of the design allows for simple one- or two-man operations slaughtering a few birds at a time. This is an attractive design because implementation and operational costs would be low. However, the production capacity for this facility would be so limited that there is a question as to whether it could meet even the existing demand, especially for those producers who may wish to process a few hundred birds in a day. Cold storage is extremely limited and there isn't room for an air-chilling system.

Design Option Two is the second-smallest design, measuring 60' by 30'. This design economizes space but gives ample room for loading animals in crates to the kill room and running a relatively large crew for larger production runs. Office space appears adequate

to meet the needs of a state or federal inspector and coolers and freezer layout can be modified for expansion or special applications, such as air chilling of carcasses. The eviscerating and processing room is efficiently designed to accommodate as few as two workers and as many as five. At just under 2,000 square feet, this design's cost appears within the realm of possibility for a project with limited resources.

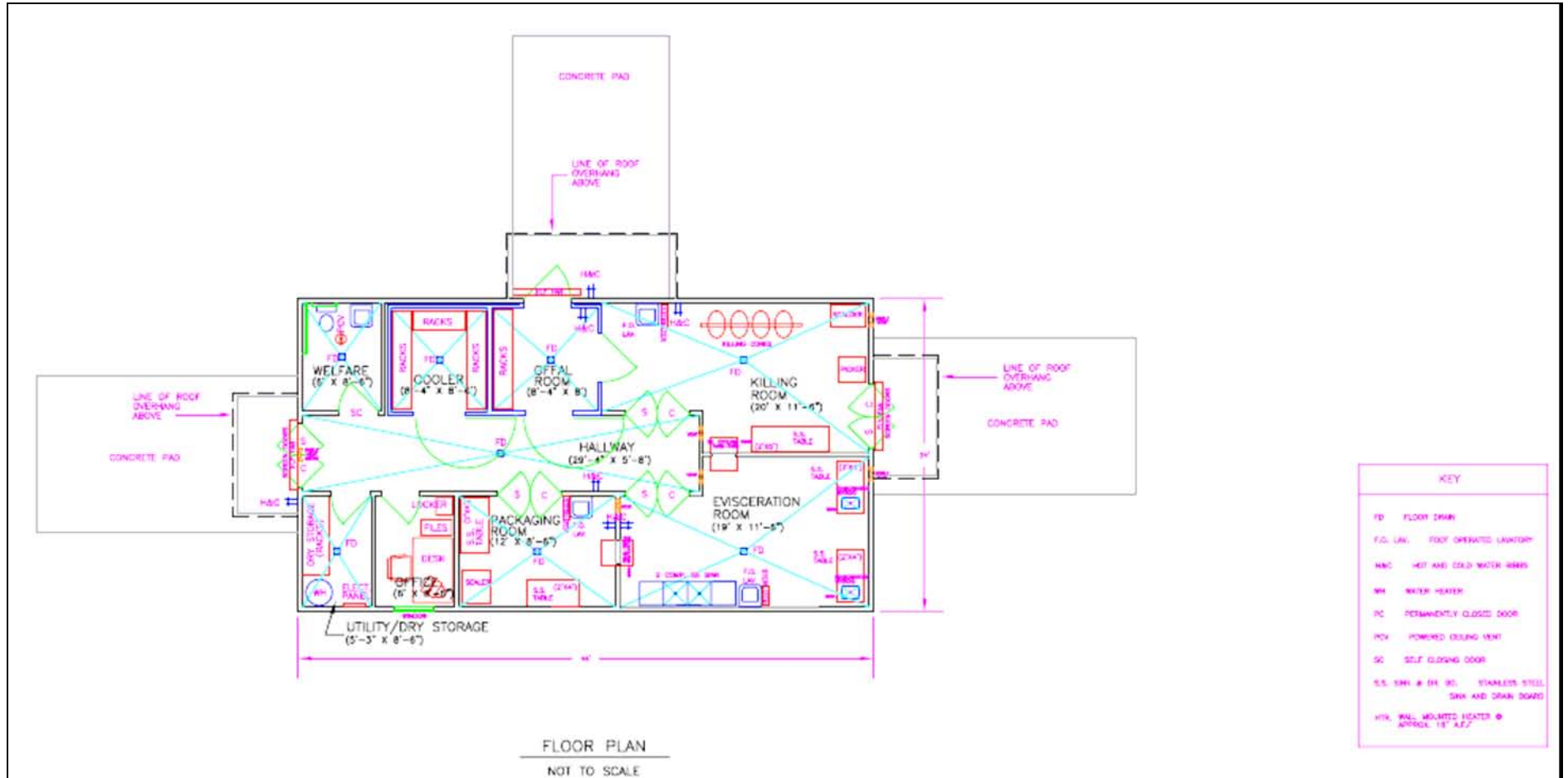
Design Option Three, at 125' x 60', offers the largest and most comprehensive design of the three options developed by P&C. While this design affords the greatest production potential and processing capacity, an estimated development cost in excess of \$1 million is prohibitive.

The following pages show the three possible plans as well as details of specifications and cost estimates for complete construction. Construction details, provided by the engineering and architectural firm of Smithson, Inc. of Rocky Mount are based on the design specifications for building Design Option Three. An estimated cost of construction for that design is given at \$1,443,722.

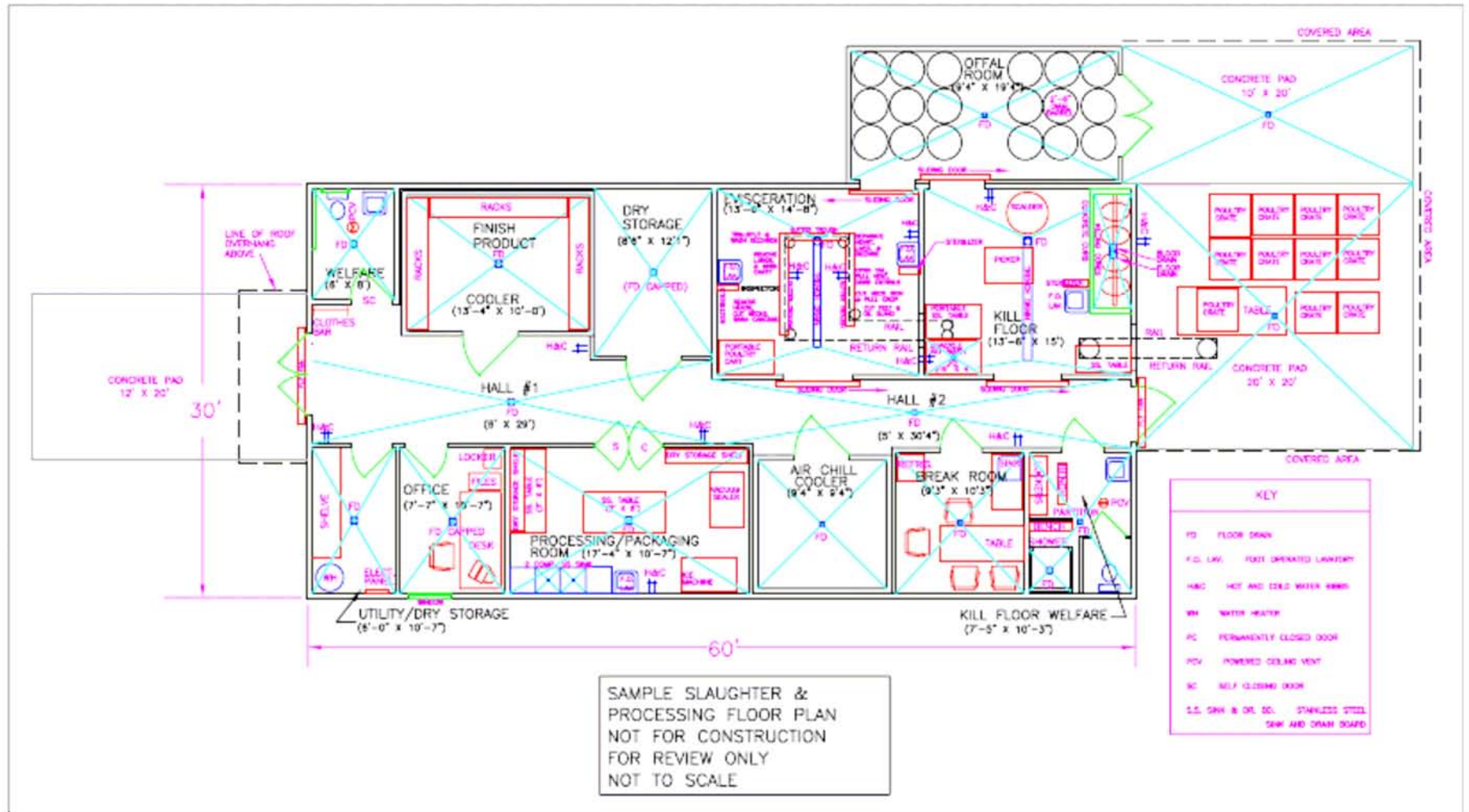
The price quoted for the larger design is approximately \$192 per square foot. Based on conversations with experienced agricultural engineers, the quoted price appears to be extraordinarily high. The quote from Smithson appears to be based on previous design work the company has done for a large-animal slaughter facility and includes such equipment as an automatic dock lift, heavy insulation and HVAC and cold storage systems that appear beyond the needs of a small-scale manually operated small-animal facility.

From discussions with P&C engineers and reviews of websites promoting prefabricated buildings (http://www.buyerzone.com/industrial/modular_buildings/prefab_guide.html and <http://www.metal-steel-buildings.com/building-sale-prices.html>), researchers believe that Design Option Two can be built for a cost in the range of \$150 to \$160 per square foot, or from between \$297,000 and \$316,800 for the 1,980-square-foot facility. This price range is confirmed by an assessment given by D. Michael Ward, an experienced industrial general contractor based in Asheville.

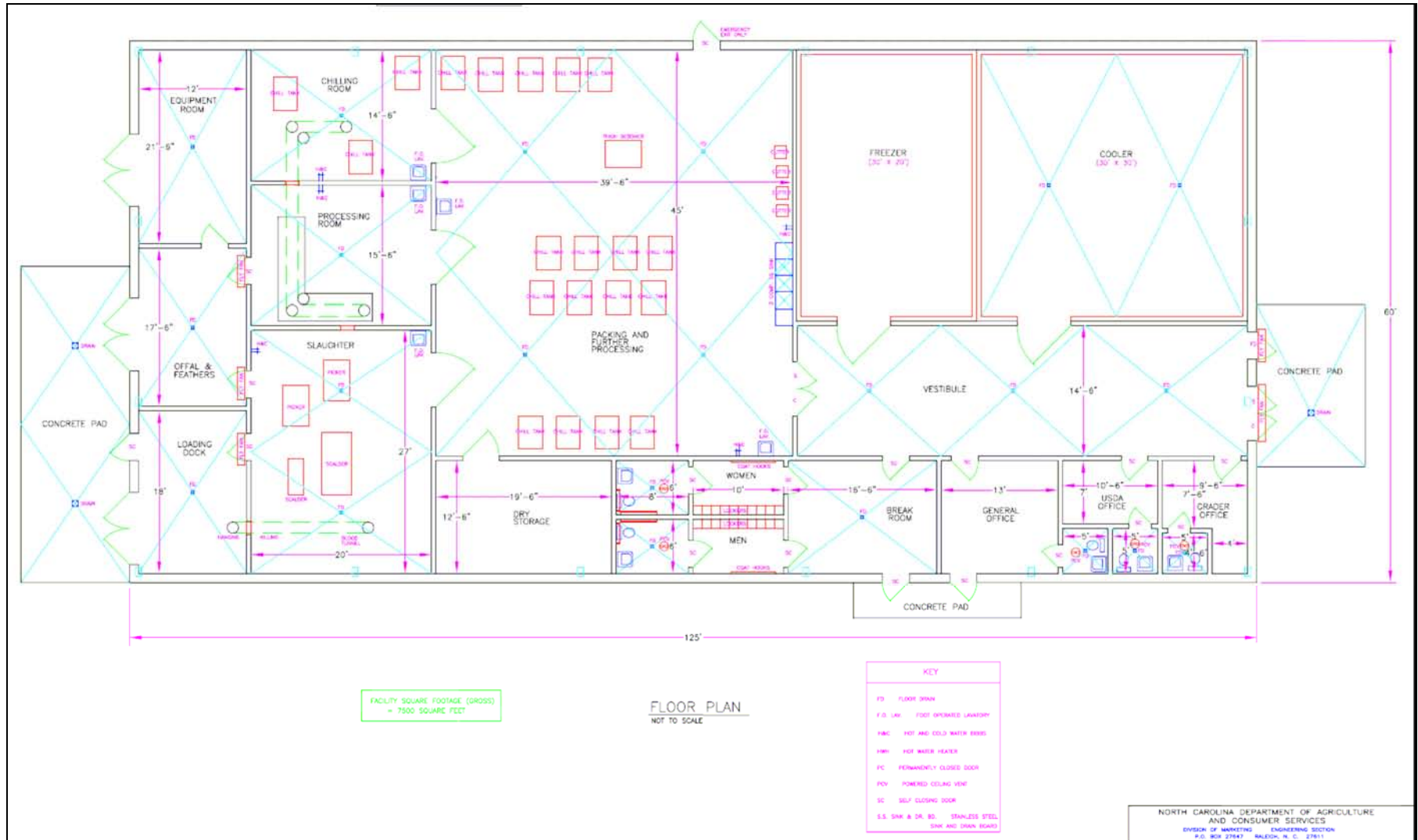
Design Option One: 44' x 24' Small Scale Poultry Slaughter Facility



Design Option Two: 60' x 30' Small Scale Poultry Slaughter Facility



Design Option Three: 125' x 60' Small Scale Poultry Slaughter Facility



In response to a request from researchers, Smithson supplied the following overview of a scope of work in the construction of a small-scale poultry slaughter facility. While the specifications detail certain components that are unnecessary for a project of this size and nature, the scope of work gives a good general description of the process of construction for this facility.

Scope of Work:

Smithson, Inc. in conjunction with E. G. Smithson & Associates, Inc. proposes to render services to design and manage construction for a new poultry processing facility as described below.

Scope of work shall be as described below:

Sitework:

Furnish materials, labor and equipment to perform all sitework as described on plans and specifications. Scope of work shall include the following:

- a. Clear, grub & grade areas as specified on grading plans (2 acres);
- b. Haul in fill material to fill site to elevations as required, placed and compacted to 95% standard;
- c. Install all erosion control devices;
- d. Place and compact 8" ABC stone with 2" binder 1" I-2 asphalt at driveway entrance and 6" ABC stone with 2" I-2 at vehicle parking. Also place 6" ABC stone in rear shipping and receiving area.
- e. Provide and install 24" curb and gutter as required to control storm water run-off;
- f. Storm water drainage system, retention pond;
- g. Engineered site plans designed by Registered Engineer in the State of North Carolina;
- h. Permanent seeding and landscaping.

Note:

Unsuitable Soils:

In the event unsuitable soils, rock, water are discovered during excavation for sitework, foundation work or installation of utilities, this material will be removed and replaced with suitable materials at owner's expense.

Concrete:

- a. Foundation and footing 3000# PSI concrete reinforced with steel rebar;
- b. 4" thick – 4000# PSI mix reinforced with fiber mesh at the rate of 1# per cu. yd.;
- c. 6 MIL vapor barrier;
- d. Floor slab to be sawed 25% depth of thickness;
- e. All saw joints to be filled with semi-rigid joint filler;
- f. Slab to receive (1) coat cure and seal at the rate of 300 sq. ft. per gallon;
- g. Concrete loading apron to be 12' x 36' x 6" and 12' x 20' x 6" thick reinforced with 6 x 6 wire mesh;

Masonry:

Provide materials, labor and equipment to construct all foundation walls as shown on architectural plans using 8" x 8" x 16" std. masonry units reinforced with #4 rebar at 32" on center.

Structural Steel:

Furnish materials, labor and equipment to fabricate and erect 16,844 sq. ft. of structural conventional steel using hot roll beams, bar joist and prime painted decking. Miscellaneous steel to include the following:

- (12) 6" dia. Guard post.
- (2) Sets of steel steps;
- (1) Structural steel designed to support processing rail.

Note: Building structure to be designed for 20# PSF live load and 100 MPH wind velocity to meet IBC building codes.

Roofing:

Furnish materials, labor and equipment to install a .045 TPO single-ply mechanical fastener membrane roof system with 2.5" of roof insulation. Roof slope to be ¼" / 12 sloping from ridge to eave.

Insulated Panels:

Provide and install 4" thick insulated wall and ceiling panels with USDA approved finishes on exterior and interior of building as shown on architectural plans.

Doors:

Provide materials, labor and equipment to install the following doors:

- (1) Pair 6' 0" x 8' 0" x 1-7/8" thick polyethylene rotating / molded construction double swing traffic doors with stainless steel hardware 20" x 22" vision lites;
- (3) Pair 6' 0" x 10' x 1-7/8" thick polyethylene rotating / molded construction double swing traffic doors with stainless steel hardware 20" x 22" vision lites;
- (8) Polyethylene post;
- (2) 96" x 96" x 4" electric horizontal slide doors for cooler;
- (1) 96" x 96" x 4" electric horizontal freezer door;
- (6) 36" x 84" x 4" thick infit cooler doors.

All doors to have jamb casing and 4" returns.

Interior Personnel Doors:

Provide and install the following personnel doors.

- (2) 3070 metal galvanized exterior door with 16GA frame and mortise lockset;
- (1) 3' 0" x 7' 4" metal galvanized door and frame with cylindrical lockset;
- (12) Interior 3' 0" x 7' 4" metal galvanized doors and frames with cylindrical locksets.

Aluminum Frame Glass:

Furnish and install the following glass doors and windows:

- (2) 3070 full glass door ¼" glass;
- (1) 40 x 30 fixed glass windows with 1" thick insulated glass.

Loading Dock Doors & Equipment:

Provide and install the following:

- (1) 8' 0" x 8' 0" insulated overhead doors with vinyl finish and vertical high lift track, electrically operated;
- (2) 8' 0" x 8' 0" galvanized rolling steel door / chain hoist operators;
- (2) 8' 0" x 9' 0" vinyl covered dock seals;
- (2) 6' 0" x 6' 0" x 25,000# mechanical loading dock.

Awnings:

Furnish and install the following aluminum awnings:

- (1) 33' 0" wide x 5' 0" projection.
- (1) 20' 0" wide x 5' 0" projection.

Finishes:

Provide materials, labor and equipment to perform the following work:

- a. Paint exterior foundation walls with (1) coat primer and (1) coat elastomeric paint;
- b. All galvanized exterior/interior doors and frames to be painted with (2) coats semi-gloss oil base paint.

Suspended Ceilings:

Provide and install the following ceiling as noted below:

- a. Kill floor to receive 4" thick insulated panel system to block walls;
- b. Welfare areas and break room to receive a 2 x 2 x 5/8" thick vinyl covered ceiling tile with std. metal grid;
- c. Office area to receive a 2' x 2' x 5/8" ceiling tile "huma guard", mounted on standard metal grill;
- d. Processing, shipping, receiving and cooler areas to have a suspended ceiling with 4" thick insulated panels.

Floor Covering:

Provide and install the following floor finishes:

- a. Install 1/8" thick VCT tile in break room and office area with 4" vinyl base;
- b. All other floor areas to receive ¼" trowel epoxy finish.

Ventilation System:

Furnish materials, labor and equipment to install the following ventilation system to create a (1) minute air-exchange in the kill floor area.

- (1) Exhaust fan with automatic louver at boiler room;
- (2) 36" intake fans with motorized louvers and dampers and insect screens;
- (1) 48" roof mounted exhaust fan with curb, hood, and back draft dampers in slaughter floor area.

System to be designed to create a 1-minute air exchange holding at 10% positive pressure.

Fans and louvers to be fabricated using galvanized construction.

HVAC System:

Furnish materials, labor and equipment to install the following HVAC equipment:

- (1) 2-ton heat pump - kill floor welfare/break room and office area.

All equipment to be installed with proper duct work, supply grills and returns.

Plumbing:

Furnish materials, labor and equipment to install the following plumbing:

- (5) Handicap flush valve water closets;
- (5) Wall hung H/C lavatories;
- (1) Single compartment SS sinks;
- (1) Triple compartment sinks;
- (2) Blood and water drain;
- (1) Fiberglass H/C showers;
- (2) Hi-lo electric water coolers H/C
- (14) Traffic rated floor drains w/brass top;
- (3) Floor sinks with strainer;
- (5) Trench drains with traffic rated galvanized grates (8' 0");
- (1) 3" backflow preventer 24 x 24 heavy duty sand trap drain;
- (6) Strama station hose stations;
- (2) Icemaker hub drains;
- (2) Vending machine – hook up only;

Complete hot and cold water piping system, insulated as required for the above items.

Note:

6" PVC exterior sewer and 2" exterior copper water lines are included to sewer and water lines. Actual tap to tie-in is not included. Smithson assumes sewer line and water line to 5'0 out of building.

Refrigeration System:

Furnish materials, labor and equipment to install the following equipment:

- (1) Complete thermo bank systems for chill holding cooler – 4 year compressor warranty;
- (1) Complete saver systems for 50° process room – 4 year compressor warranty;
- (1) Complete thermo bank system for -10° freezer – 4 year compressor warranty;
- (2) Complete thermo bank system for 40° shipping and receiving dock – 4 year warranty;
- (2) Complete thermo bank system for 40° pallet cooler – 4 year compressor warranty;
- (1) Complete saver system for offal room – 4 year compressor warranty;
- (1) Complete saver system for raw product staging – 4 year compressor warranty;
- (1) Complete saver system for cooked product cooler – 4 year compressor warranty;
- (1) Complete saver system for cooked product packing – 4 year compressor warranty.

Electrical:

Furnish materials, labor and equipment to install the following electrical:

- (1) 600 AMP 480V 3 phase service / and 3 sub-panels (2/200; 1/400);
- (1) 2" PVC conduit for telephone to property edge / 12 telephone stub ups;
- (1) 75 KVA transformers and (2) 200 AMP 120 / 208V panelboards;
 - 2 x 4 T-8 vaportite fixtures 4 lamp;
 - 2 x 4 lay-in surface fixtures;
 - Exit / Emergency combination fixtures (9 vaportite);
 - Emergency lights (4 vaportite);
 - 400 watt metal halide wall pack fixtures;
 - 20 AMP 120V special duty receipts. on wash down walls;
 - 20 -30 AMP 3 phase drop receipts. for prod. equipment;
 - Wire for scale;
 - Wire for hoist;
 - Wire for exhaust fans;
 - Wire for intake fans;
 - Wire for fly fans;
- (1) Install power wiring for gas fired boiler;
- (1) Lot wire for equip in packaging room / processing room;
- (1) Wire for office HVAC;
- (6) Wire for vending equipment;
- (6) 20 AMP 120V spec. duty receipts. in offices;
- (1) Lot single pole light switches;
- (8) 3-way switches;
- (60) 15 AMP 120V general duty receipts. in non-production areas;
- (1) Lot wire for hot gas defrost refrigerated equipment including:
 - No wiring for fire alarm system included.

Exclusions:

No cost has been allowed for the following:

- No hazardous materials;
- Building Permit / municipal fees;
- Utility fees / acreage fees;
- No signage;
- No Performance bond;
- Builder's Risk Insurance;
- Production or processing equipment production rail;
- No steel platform or staging;
- No boiler;
- No racks;
- No telephone/fire alarm/security system;
- No waste storage tanks for blood disposal;
- No sewer and water tie-in / tap fees.

IV. Other considerations

Various other considerations must be taken into account when estimating the cost of basic facility construction, as follows:

In most cases, a licensed architect is needed to generate detailed design specifications for the building's general contractor and for review and approval by the local authority in charge of building inspection. The cost of architectural services is estimated at 10 percent of total construction costs. However, the McDowell County building inspector has reported that for construction of buildings less than 2,500 square feet a licensed architect isn't required.

The researcher has discussed various options for construction with personnel in NCDA&CS P&C. It may be possible to construct a facility's basic load-bearing shell using a prefabricated system that has already received approval for construction. Following this phase of development, interior build-out can be completed using a local construction company.

Most projects require a construction performance bond and construction insurance to guarantee completion of a building project and to cover losses that may be incurred during the construction phase of the project. Total costs for this should not exceed \$5,000.

In McDowell County, the Building Inspections office is responsible for the enforcement of the North Carolina State Building Codes, which are enforced through inspections and the issuance of building permits for basic construction, plumbing, HVAC, fire suppression and electrical installation. It's the responsibility of any individual who either is building or renovating to obtain the appropriate permits before beginning construction. The Building Inspections office has five employees and is open Monday through Friday from 7:30 to 12:00 and can be reached throughout the remainder of the day at (828) 652-7121. Jerry Silvers of that office has estimated the cost of building inspections for this facility at \$600.

The optimal site identified in Marion has several additional costs that will need to be incurred. Specifically, these include extension of a sewer line by approximately 300 yards, extension of single- and three-phase power lines, and site remediation to remove lead from the former shooting range. The cost estimate for the extension of sewer lines is \$65,000, and for the extension of water lines, \$45,000. Site remediation for removal of lead is estimated at \$30,000. Finally, post-construction gravelling of the driveway areas is estimated at \$5,000.

V. Conclusion

Given the limited resources of grant-funded projects, Design Option Two, with a total of 1,980 square feet, is recommended for consideration. This scale of plant will afford the vast majority of growers in the WNC region ample space to process their anticipated production volumes to meet market demand potential for a range of small-animal meat products.

A large body of evidence indicates that basic construction costs can be in the range of \$150 to \$160 per square foot. This design is within a cost range that has precedent for external non-debt financing (grants) in North Carolina. An all-in price for basic construction, not including equipment but including site preparation and water and sewer extensions, is estimated at \$450,000.

Section Eight: Equipment Options for a Small-scale Small-animal Processing Facility

I. Introduction

This section details equipment design issues for a small-scale small-animal processing facility. Based on measured levels of producer demand and potential availability of funding, researchers recommend development of a slaughter and processing facility for multiple species of poultry and rabbits. This section summarizes research into different types of equipment necessary for partially automated processing at speeds of fewer than 200 birds per hour. Sources on equipment details and specifications are derived from the following resources:

Small-Scale Poultry Processing, an online publication from:
ATTRA - National Sustainable Agriculture Information Service
By Anne Fanatico
National Center for Applied Technology Agriculture Specialist
Edited by Luke Elliott, Lance Gegner and Richard Earles
May 2003
(used by permission; see appendices)

Equipment information from:
Brower Equipment Company
Houghton, IA 52613
(800) 553-1791
www.browerequip.com (used by permission)

Ashley Equipment Company
901 N. Carver St.
Greensburg, IN 47240-1014
(812) 663-2180

Pickwick & Knase Co., Inc.
7887 Fuller Road, Ste. 116
Eden Prairie, MN 55344
(952) 906-3335
www.knasecoinc.com (used by permission)

II. Equipment

As the poultry industry has consolidated, equipment for small-scale small-animal slaughter and processing is becoming increasingly hard to source. Vertically integrated corporations, supplying almost all commercial poultry in the U.S., typically manage fully automated plants processing hundreds of thousands of birds a day. Equipment manufacturers, responding to the economic realities of vertically integrated poultry, are primarily supplying processing equipment systems that are too expensive for small independent producers and that are unable to accommodate these producers' small volumes of production. One mid-sized processing facility recently established in North Carolina had to source its equipment from a South American manufacturer due to cost and availability.

Fortunately, a handful of specialty equipment manufacturers still exist in the country, and several farm-based entrepreneurs have been able to engineer specialized equipment for the small-scale poultry processor. Additionally, the equipment needs of manual or semi-automated poultry processing are relatively minimal when compared to those of large animal slaughter and processing operations.

In *Small-Scale Poultry Processing*, Anne Fanatico writes, “Access to processing is a critical issue for small producers. Consolidation in the meat-processing industry has left very few small plants that will do custom poultry processing. (Large plants generally don’t process for small producers; they can’t keep track of a small batch of birds and can’t make money on small-volume orders.)”

She further outlines three types of processing – on-farm, small and large – as follows:

Comparison of types of processing			
	On-farm	Small	Large
Size	Outdoor or shed facility	2,000-3,000 sq. ft.	150,000 sq. ft.
Equipment	Manual	Manual/mechanical	Fully automated
Cost	Less than \$15,000	Less than \$500,000	\$25,000,000
Labor	Family	Family/hired	Hired
Capacity	50-100 birds per day	200-5,000 birds per day	250,000 birds per day
Operation	Seasonal; 1-30 processing days per year	Seasonal or year-round; 50-plus processing days per year	Year-round; process daily
Marketing	Product sold fresh, sometimes frozen; whole birds	Fresh and frozen, whole and parts	Mainly cut-up, sold fresh, further-processed
Comments	Independent operation; labor intensive; low risk; usually non-inspected, direct sales	Independent or part of a collaborative group; requires good markets and grower commitments	Part of an integrated operation including grow-out, processing and marketing

Based on the processes outlined by Fanatico, the following equipment is needed for each processing stage. The basic stages and equipment needed for small-scale, small-plant processing are summarized in the following table.

Stage	Basic Action in Stage	Equipment Needed
1	Pre-slaughter: catching and transport. Farmers will transport birds to facility	50 plastic transport crates (8-10 birds each)
2	Hand unloading and holding	No special equipment needed. Birds can be held in plant in transport crates
3	Immobilizing, killing and bleeding: birds removed from crates and placed in funnel-shaped cones, killed and then bled by hanging on shackles on non-motorized track.	1 kill trough (4 station per side) with 4 kill cones 4 hanging shackles for rabbits 1 stun knife for turkeys 10 knives for kill (cutting throats)
4	Feather removal: birds removed from cones and scalded. Birds are put on evisceration shackles after scalding and picking.	2 gas-fired scalders with a dunking mechanism (12-bird capacity) 1 singeing burner 1 tub or batch picker (12-bird capacity) 12 evisceration shackles
5	Manual removal of head, oil glands and feet.	10 knives for removal of head, oil glands and feet
6	Evisceration: small plants eviscerate manually with scissors, knife or a handheld vent-cutter gun with a circular blade, and draw out the guts by hand. Feathers and guts removed manually.	4 scissors for evisceration 1 handheld vent cutter 1 lung puller 1 gut trough (stainless steel) 5 barrels (non-flow-away method)
7	Washing the carcass: carcass washed inside and out before chilling.	1 food-grade hose and sprayer system with chlorinator 1 carcass wash sink w/sideboard
8	Chilling: carcass is chilled to lessen microbial growth. Air-chill equipment is available from Linco, Stork and Meyn. Equipment is made in Holland and Denmark. Recommendation is for custom engineering of a walk-in cooler or freezer.	Air chill 1 probe-type, calibratable thermometer 1 insulated room with a temperature of 20-35 degrees Rack system to hold birds Water chill (backup and extremely small batches): 2 food-grade plastic or stainless steel bins (with bottom drainage holes) ice machine (crushed, not cubed, ice) 300-lb capacity
9	Cut-up, deboning and further processing	10 knives
10	Aging and packaging: poultry needs to age for at least four hours before it is eaten or frozen or it will be tough. After a carcass is properly chilled, it is ready to be packed in a cool room.	Whole birds: Special shrink-wrap bags (that shrink when dipped in hot water) 1 stainless steel hot water tub 1 clip machine to close bags Whole birds and parts: dry pack trays and wrapper
11	Storage: coolers and freezers	See plant design
12	Delivery and distribution	Customer pickup of product; commercial delivery companies to deliver product if needed
13	Clean-up Other equipment	2 pressure washers 1 small band saw (rabbits) 11 wire rack shelves (5 ft by 2 ft) 1 three-basin sink 2 sterilizers (or sanitizers) 2 stainless steel tables (2' x 6') 4 stainless steel tables (3' x 6') 1 stainless steel table (3' x 4') Office equipment: 1 small metal or wooden desk 1 2' x 4' office table 1 five-drawer file cabinet 2 desktop computer systems

III. Other considerations

Waste from processing includes offal, feathers and blood. Small plants typically pay rendering companies to pick up barrels of waste. Other options include on-site composting, on-site incineration or deposit at a nearby landfill.

Wastewater can also be a concern in small plants. If less than 25,000 gallons a day is used, no pretreatment of wastewater is needed, provided that the system ties into a municipal sewer system. To put this into perspective, processing 2,000 birds would develop approximately 8,000 gallons of wastewater, far under the 25,000 gallon threshold.

IV. Selected small-scale equipment

Researchers contacted three established equipment companies about sourcing needed processing equipment. These three companies - Ashley, Brower and Knase - all provide various types of equipment suitable for small-scale poultry processing. This report does not specifically recommend any single company's products over another. However, for reasons already discussed, the options for sourcing small-scale poultry processing equipment in the U.S. are limited to a handful of companies. In certain instances, such as air chilling of carcasses, options for on-site custom engineering appear viable.

Information below is provided directly from Brower Equipment Company and Knase Company. Claims of superior qualifications for specific pieces of equipment are from the companies themselves and do not necessarily reflect the opinions of researchers.

Brower Equipment Company

Brower Equipment Company advertises itself as "your complete source for poultry, livestock, and pet equipment." They've been in operation for 80 years with various product lines.



Rack and killing cones

Stainless steel racks designed to hold six model 54K cones, eight model 53K cones or ten model 53K or 51K cones. Adjust height up to 60" (152.4 cm). Unit has 4 leveling feet. When you order cones, you also need to order model QRBT-IA brackets. Rack shown with model BRE214 poly tank (not included). Tank is 2' wide (.61 m) x 4' long (2.44 m) x 1' high (.3 m).



Stainless steel bleeding trough

When a fully automatic system is not needed, killing cones and a stainless bleeding trough are preferred. Blood flows down the back panel and into a sloped trough.

Killing Cones

Four sizes are available, all constructed of 20-gauge stainless steel. Hemmed edges and lock formed seams assure no snags. Widths shown below are measured at the widest part of the cone, not the width at back edges.



No. 54K - for large turkeys – 12" x 20" No. 53K - turkeys, roasters, broilers - 10.75" x 20" No. 52K - broilers, guineas, ducks – 10" x 15" No. 51K - fryers, pheasant – 7" x 10.5"

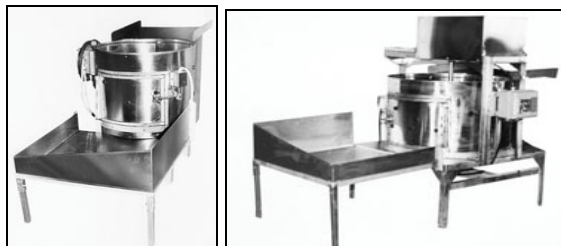
Stunning knife

Stunned birds are easier to handle and they bleed more quickly and thoroughly. Stunned birds have fewer bruises and broken wings. You speed up your processing operation and can control voltage to various ages and sizes of birds or for changing environmental conditions. This is virtually the only way to kill a turkey.



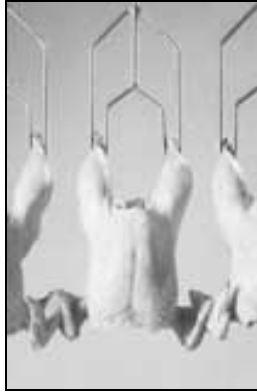
Batch picker

Brower commercial pickers have one superior design advantage: a conical-shaped centrifuge. The cone shape permits birds to freely rotate for a clean pick; by contrast, flat centrifuges result in birds piling up in the center. The result is a poor pick, resulting in the need to run the picker longer (at risk to skin breakage) or to handpick the birds. All centrifuges are made of heavy-duty aluminum.



Shackles

Our stainless steel shackles are of the highest quality for heavy-duty commercial usage. We stock broiler shackles, which can be used for most other birds and rabbits.



Offal cart

This offal cart is a handy accessory for use with eviscerating lines, tables or stationary eviscerating units. Use it to catch inedible offal. The perforated insert collects solids while liquids remain at the bottom. Completely portable with four casters and handles.



Stainless steel eviscerating table

This all stainless-steel unit is designed for cleanliness, long wear and economy. The top is one piece and seamless and has a 1 1/2" lip. Unit comes complete with two four-inch eviscerating tubes and a center drain, two gooseneck wash valves and two trigger valves with hose. The table accommodates up to four operators. Use for fish and small game as well.



Stainless steel gizzard peeler

The hardened, spiral-cut rolls are direct driven. The drive can't slip, as can occur with a belt-driven machine. A third horsepower with gear reducer turns the peeler rolls at 288 rpm. A double-pole switch allows you to reverse the rolls in the event anything becomes trapped in them.



Giblet pans



Chilling tank agitator pump

This agitator pump (shown attached to PP430 Chilling Tank in the photo below) maintains constant water temperature assuring a uniform chill. The pump can be moved, so you need only one pump for several tanks. The standard unit fits over the PP430 or PP412 chilling tanks, but can be easily modified to fit other tanks.



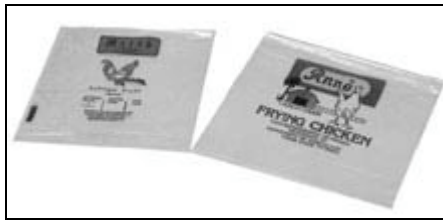
Large-capacity chilling tanks

These popular chilling tanks are replacing all other types in the field. Each unit comes standard with a heavy-duty metal frame, heavy-duty casters and a drain. Choose from three (3) sizes.



Poultry bags

Smartly display your dressed fowl with our polyethylene, gusseted bags. There is no center seam; they're made of the clearest material on the market and are designed for easy loading. All bags are made of .0015 material, except for the 12" x 8" x 30" bags, which are .002. All bags are packed either in quantities of 100 or 1,000.



Work tables

Polished tops are 14-gauge stainless steel, the adjustable shelves is 16-gauge galvanized and legs are 16-gauge galvanized. The tables have 1" (2.54 cm) adjustable bullet feet and sanitary rolled-rim edges, are heli-arc welded and have sound-deadened tops.



Chrome-plated wire shelving systems

These systems are 74" tall (188 cm) and have four shelves. Check price list for model numbers and sizes.



Chrome wire racks/carts

These racks have two locking casters and four donut bumpers, are 70" tall (177.8 cm) and have four shelves. Check price list for model numbers and sizes.



Knase Company

Knase Company Inc. has over 70 years of experience in the poultry-processing field. Their interests range from cost analysis, purchasing, engineering, manufacturing and sales. They claim to increase productivity and improve and reduce labor costs.

Killing Cabinet

Designed for bleeding up to 15 chickens (3 full SH5 Shackles) at a time. An empty Shackle is placed at the entrance to the KTC and loaded with five birds straight from the coop. They are stuck with the S128 Sticking Knife or the SKVS Electric Knife and dropped back into the KTC to bleed. A water spray may be used either continuously to wash the blood away or intermittently for cleaning if you wish to trap the blood for resale. When the birds have bled out the Shackle is used to transport them to Scalding. 36" W x 60" L x 52" H (91 cm x 152 cm x 132 cm); 100 lbs (45 kg).



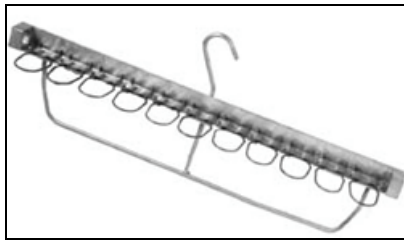
Killing Cones

These galvanized funnels simplify killing and clean up by restraining the bird during bleeding in a low-volume operation; see the KTC Killing Cabinet and SH5 Shackles for higher volumes at more efficiency. Three sizes are available (D71 for game birds- 11" long x 7" wide at top, D72 for broilers - 15" long x 10" wide at top, D73 for small capons, etc - 21" long x 11" wide at top).



Bird Shackle

Slash your handling time and effort up to 80% with this exclusive Knase feature! The SH5 carries 5 broilers or capons through the killing, bleeding and scalding operations - no individual handling is necessary. The birds are held securely in position to make your work efficient and trouble-free. The SH5's spring wire clips are adjustable to maintain the proper tension, and are easily replaced when they eventually wear out. 24" W (62.5 cm), 4 lbs (1.8 kg).



Electric Stunning Knife



Required in some states, an SKVS should be your first investment when it's time to improve your slaughtering efficiency. With the SKVS a controlled voltage shock is delivered to birds (or rabbits) the instant before sticking. This immediately stops their struggle, preventing broken bones and bruised bodies. Heart action is speeded up to actually pump the blood out so bleeding is faster and more thorough, too. Even clean-up is made easier.

Drum Pickers

MD Master D - For all birds and frequent use, includes a welded steel frame, stainless work surface, rear feather chute, enamel finish and 3/4 hp. motor.



Eviscerating Table

A production table providing all the accessories to make eviscerating fast and efficient for up to 4 operators at low or medium volumes; for maximum performance, see the Evisc-O-Veyor. The ET4 features 2 large disposal holes for offal, 2 high-rise adjustable mist spray nozzles, and a protected drain. Each table also includes 2 TF Lung Removers complete with valves and 5 ft hoses to loosen waste matter and flush it out with water, but best serves as an island with access on all sides. 59" W x 45" D x 38" (150 cm x 107 cm x 97 cm); 200 lbs (90 kg).



Cutlery

S-128 Sticking Knife permits killing without severing the neck for faster bleeding and cleaner picking. Double edged 5/6" x 3-1/2" blade.



S-130 Pinning Knife removes the most stubborn pinfeathers - easier on your hands. Has 3/4" x 2-1/2" scraping blade with thumb guard.



Boning knives

These knives were designed for the poultry industry. The ergonomic handles provide a comfortable slip-resistant grip. Stain-free high-carbon steel blades are hard enough to hold an edge yet easy to sharpen. Beef and lamb skinning knives also available.

S-132 Boning Knife Remover combines a stainless 3" Blade, Han 46240 Sharp Point Boning Knife.



S-134 Utility/Boning Knife interior washing. Give your sore 4" Blade, Han 46242 Utility/Boning Knife.



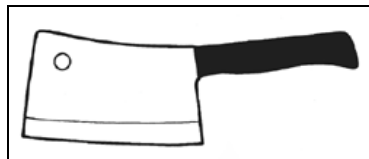
S-136 Boning Knife 5" Blade, Han 46243 Wide Stiff Boning Knife.



S-138 Utility/Boning Knife 6" Blade, Han 46244 Utility/Boning Knife.



S-140 7" STAINLESS STEEL CLEAVER, DEX-19283 This all-purpose NSF cleaver is made from quality stain-free, high carbon steel with a high-impact polypropylene slip-resistant handle.



Poultry Cutter

A cut-up bird is more profitable, and the PC2 will cut up to 300 birds an hour into 10 pieces or less. The technique is easy to learn, effortless, and completely safe, thanks to the PC2's stainless steel hood and guard. Simply lay the joint to be cut on the cutting bar and slide it into the 9-1/2" special alloy stainless steel circular blade. Your hands stay below the bar and away from the blade at all times.

The PC2 is a table top model, measuring 16" x 16" x 18" high on its self-contained shelf, and it weighs 60 pounds. Current required is 110 v, 60 Hz at 15 amps. Special voltages are available on request.



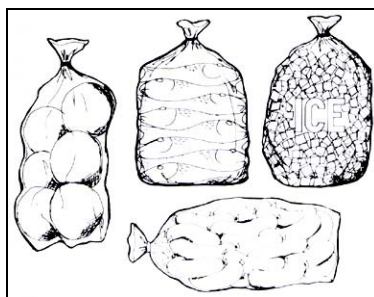
Gizzard Peeler

The K90 makes a tedious job fast, easy and safe even for unskilled labor. Just one or two passes over the non-clogging, open-ended rolls and the job is done... with professional quality. There is no way that the lining can get jammed in the rolls.



Manual poly Bag Sealer

The Salco Max Packers offer easy and rapid sealing of poly and net bags, rendering them ideal for packaging meats, fish, ice and produce. Best of all, since these tools do not come into direct contact with foodstuffs and are not foods, drug, medical devices or cosmetics, they are not covered by the statutes enforced by the U.S. Food and Drug Administration.



Prospective, Small-scale (1,000 birds / day maximum) Chicken, Turkey and Rabbit Processing Plant

		Knase	Brower	Ashley	Estimated				
Equipment	Quantity	Unit Price	Unit Price	Unit Price	Total Price	Knase Comments	Brower Comments	Ashley Comments	Researcher Comments
Plastic Transport crates (8 to 10 bird capacity each)	50	n/a	33.6				Model COOP11		Farm expense; no cost to project
Kill trough with 8 cones (4 cones per side)	1	2100	1384	2075	2100	KTCS Killing Cabinet	88 " long SS bleeding trough	Wall mount - 10 cones or stand alone 5 cones per side	
with cones positioned over blood trough; 6 cones for chicken; 2 larger cones for turkeys	5-6	110	28, 36, 68		210	SH5 Shackles 5-Bird Cap 110.00 each	Broiler cones - \$28; Rooster - \$36; Turkey - \$68		Recommend 2 to 3 turkey kill cones
Hanging shackles for rabbits	4	35	n/a	32	128			Broiler shackle - can be used for rabbits	
Bleed trough for rabbits	1	n/a	n/a	n/a		Use above KTCS and SH5 Shackles	Use same trough	Use the same kill trough	Use same kill trough as for poultry
Stun knife for turkeys	1	2150	2940	2395	2400	Use for all animals	electrical	Poultry stickers - thin knives w/ point	May not be needed
Knives for kill (cutting throats)	10	12	16.50	14	140		Poultry killing knife w/ SS blade model S128		
Gas-fired scalders with a dunking mechanism (12 bird capacity)	2	7000	9100	4545	10000	AS60/AD Only 5-Bird Capacity	Gas fired, 15 bird capacity model SS3055	Uses perforated plate to rotate (not dunker) SS-30 has 12 bird max.option SS-36 has 18 bird max.	May be able to acquire from Amish farm equipment company in PA

Singeing burner	1	n/a	141	329	150			gas fired w/ 10 ft hose	
Tub or batch picker – 12 bird capacity	1	6000	12110	6200	6500	SPJ3 40# Cap. Or TP2 90# Cap. \$ 8500.00	10 bird capacity model SP3055	SP-30 batch picker	May be able to acquire from Amish farm equipment company in PA
Evisceration shackles	12	35	34.8	34	420		model ESSSR	stainless steel	
Knives for removal of head, oil glands and feet	10	13	10	40	150	S134 4" Utility knife	model 41820	" 908 clipper - similar to roase bush clipper	
Scissors for evisceration	4	n/a	48.90	44	250		model 1328KBR	gizzard shears; heart and liver (\$32)	
Lung puller	4	40	27	15	160	TF water flush 75.00	11", Turkey - 16" = \$29	hand held lung rake (stainless steel head) - turkey size = \$17; no water flush	
Gut trough (stainless steel)	1	n/a	n/a	2,625	250			6 man gut trough - with overhanging shackle bar (4 man trough - \$2,100)	Not needed; plastic bins will do
Barrels (to hold feathers and guts)	5	n/a	488	880	350			galvanized steel offal cart w/ pipe fitting for drain and waste basket	Plastic bins will work
Carcass washing system : Food grade hoses and sprayers with chlorinator	1	n/a	1173	2800	2400		STSB	3 foot bird washer with shackle track	

Option - handheld wand washer	2	n/a		35	70			stainless steel wand	
Water chill: Food grade plastic or stainless steel bins (with bottom drainage holes)	2	n/a	615	1395	600			water chill stainless tank on casters with drain	Purchase for back-up to air chill
Knives - Cut-up, deboning	10	14	27	19	200	S136 5" Boning knife	6" boning knife	Nylon handle, 5" boning knives (3" venting knives - \$15)	
Option: Dial pocket thermometer			10.15		50		pocket model TH150		
Option: 10" Sharpening steel for knives			40		40		10" sharpening steel; model 1010		
Packaging: Special shrink wrap bags (that shrink when dipped in hot water)		n/a	n/a						Per unit costs low; should be built into processing fee
Stainless steel hot water tub (to dip shrink bags)	1	n/a		3345	350	Use the Scalders		Manual scalders w/ burner - stainless 38 gallon tank	Use two-basin stainless sink in packaging room
Clip machine to close bags	1	580	5025		600	711 Clips 2M Box 22.00/Box			
Dry pack trays and wrapper system		n/a			500				

Heavy duty aprons	12		9.50		120		Disposable Tyveck aprons = .75 each		
Clean-up: Pressure washers	2	n/a			2000				Home Depot/Lowes
Fly fans over exterior doors (6 ft)	2	n/a			4000				Home Depot/Lowes
Small band saw (rabbits)	1	n/a		2100	2100			Bi-row chicken cut saw (cuts chickens in half)	
Wire rack shelves (5 ft by 2 ft)	11	n/a	350		3850				
Three basin sink	1	n/a	n/a	945	400				Used Ingles
Sterilizers (or sanitizers)	2	n/a			2000				
Stainless steel tables (2 ft by 6 ft)	2	n/a	600		1200				
Stainless steel tables (3 ft by 6 ft)	4	n/a	752		3000				
Stainless steel table (3 ft by 4 ft)	1	n/a	575		575				
Option: SS evisceration table			838				Tables \$838 each; model ET		Not priority
Office equipment									
Small metal or wood desk	2				300				
2 ft by 4 ft office table	2				250				

five drawer file cabinet	2				250				
desktop computer systems	2				1000				
Total Cost					48,853				

V. Other Considerations

Equipment suppliers contacted by researchers have offered 10 percent discounts for large orders of equipment. This discount should be sufficient to cover transportation costs to the construction site. Installation and contingency should add another 15 percent to the estimated purchase cost of \$48,853, for a basic equipment acquisition total of \$56,181.

Coolers and freezer units have not been priced out from traditional processing equipment suppliers. Based on the experiences of researchers, one 12'x12' walk-in cooler is estimated at \$12,000 with installation.

MPID officials strongly encourage the project team to investigate retrofitting a small walk-in cooler or freezer to blast cold air over hanging carcasses. This process will reduce meat temperature to 40 degrees or less within four hours of the time of slaughter. Researchers believe this can be accomplished for an all-in cost of \$25,000.

VI. Conclusion

Basic processing equipment for a small-scale poultry slaughter facility able to process a maximum of 1,000 birds or rabbits per day is estimated at \$93,181.

Section Nine: Legal Entity Considerations for a Small-scale Small-animal Slaughter Facility

I. Introduction

Once the decision to create a poultry and small-animal meat-processing facility has been made, the most important thing to consider is what legal status that facility will take and how its operations will be managed. The management question is actually a two-part question: the first regarding the policies and procedures covering day-to-day operation of the facility and the second the issues of governance by which overall policy and strategy for the facility are made.

Financial issues are another consideration. Any new enterprise needs capital – money, space and equipment – to get started and keep going. Ideally, the facility will generate positive cash flow from its operations.

It is important to distinctly understand these two financial concepts – capital and cash flow. One way to look at it is to think of an orchard. The land and the trees planted on it are the capital of the orchard. Over the course of the year, the orchard requires labor and various materials applied to maintain the soil and trees and promote a good harvest – all considered expenses. At harvest, the fruit will be sold and hopefully the income received will exceed the expenses of producing the fruit. If so, the orchard has positive cash flow and possibly profit. Where the capital comes from, who owns it and who receives the cash flow are separate and important issues to address in the choice of a legal entity.

In this section, we'll first review the types of legal entities available for the operation of a small-animal slaughter facility. Then we'll present several organizational and financial issues affecting the facility and examine how each issue affects the various entity choices, including finance, management and governance. We'll conclude with recommendations for entity choices and suggestions for creating an effective organizational structure.

Because this section addresses legal issues, it includes references to authority and other resources to enable policymakers and professionals to access the underpinning concepts. Lay readers are invited to skip over these references or to follow them as they see fit.

II. Executive summary

Among the most significant factors in choosing the organizational entity for a slaughter facility are the role or absence of capital ownership, a need for tax-exempt status for funding or other purposes, the role of facility users or members in the oversight or management of the organization, the role of government entities in the capitalization and/or operation of the enterprise and the organizational culture of the entity. Options for forms of legal organization include an agricultural cooperative, business corporation, nonprofit corporation, limited liability company, a hybrid of these or a hybrid government/corporate entity. In the likely event that a tax-exempt organizational form is desired, the Internal Revenue Service definitions of “charitable” or “social welfare” activities should be considered in formulating the mission and methods of the enterprise. Other federal laws such as the Packers and Stockyards Act touch upon the facility's operations.

Recommendations

The best course is to first determine what sources of funding, organizational functions

and governance structures are most suitable and choose a legal entity that best fits those priorities. Begin with the end in mind. Fit the legal form to the priorities and methods of the facility rather than attempt to graft the organization to a particular entity. Examine the approach and effectiveness of the “social enterprise” or “entrepreneurial nonprofit” organizations now gaining currency in the nongovernmental sector.

III. Entity choices

For a normal business enterprise, legal entity choices are well-defined: either a corporation or a limited liability company. With the addition of a public service or economic development mission, it’s important to also consider a nonprofit corporation. In agricultural business, the cooperative is also an important form of organization to consider. In consideration of this facility, a producer cooperative or service cooperative is the specific type we will examine.

Limited liability

In this section we will only examine options that provide limited liability status. This means that while the entity can be held liable (i.e., be forced to pay) for legal claims against it, the owners and managers can’t. In the eyes of the law, the entity, not the owners, owns the business. The owners own the entity, but can’t be held to answer for court judgments against it. The owners’ investment in the entity is always at risk but their other property is protected.

Liability can arise from many sources, including injuries to people at or by the facility (personal injury), sickness in consumers caused by eating food processed at the facility (product liability) or even breach of contractual obligations by the facility. If such claims arise and are successful in court, a judgment against the facility could be enforced by seizing and selling some or all of its assets. While the facility would certainly suffer, the people involved would be protected if the facility was owned by a limited liability entity. Naturally, it’s also essential that the facility obtain insurance as further financial protection against all of these liability risks.

Agricultural producer cooperative

An agricultural cooperative is a voluntary association of farmers, growers or other producers of agricultural products for the purpose of obtaining a collective benefit in the marketplace. Cooperatives are organized for a great many types of production and farmer needs. Marketing cooperatives provide a vehicle for growers to combine their resources to sell their products with greater bargaining power in the marketplace. Purchasing cooperatives allow farmers to combine their purchasing power to obtain better prices for chemicals, equipment and other resources – even phone service and health insurance.

In this instance, the facility will provide animal-processing services to farms, which would make it a service cooperative.

Farmers, consumers and businesses use cooperatives to gain a wide variety of specialized services. In some cases, these services may be provided as a division or a subsidiary of a cooperative whose primary function is either marketing or purchasing. Agricultural service cooperatives provide a wide variety of services, including artificial insemination, milk testing, cotton ginning, trucking, storage, grinding, crop drying and livestock shipping. Other common types of service cooperatives include finance, electric, telephone housing and health care.¹⁷

Slaughtering and dressing poultry and rabbits is strictly a service, whether the members would do their own processing or facility employees would do it for them. The members would own their animals and meat at every stage in the process; the facility wouldn't own or sell any product. (However, if a future opportunity for collective marketing of poultry arises, the members could agree to expand the scope of the co-op's mission without making substantial changes to its legal structure.)

In North Carolina, agricultural cooperatives are generally organized pursuant to North Carolina General Statutes, chapter 54, subchapter V, "Marketing Associations." While the facility wouldn't be engaged in marketing, its activities do come within the scope of the statute, which states:

An association may be organized to engage in any activity in connection with the *producing*, marketing or selling of the agricultural products of its members and other farmers, or with the harvesting, preserving, drying, *processing*, canning, *packing*, storing, handling, shipping, or utilization thereof ...¹⁸ (emphasis added)

While legally it would be a "marketing association," it would still function as a service cooperative. There is another form of cooperative association authorized by North Carolina statute (N.C. Gen. Stat. § 54-111), but that particular entity is limited and less suitable than the other organizational forms considered here.

Cooperatives can have a significant and positive impact on the communities in which they are located. They create and retain local jobs, have a more long-term commitment to remaining in the community, and provide local leadership and development. Since cooperative profits are returned to local owners (and not to investors who may live outside the community), more money is spent in the community, strengthening the local economy.¹⁹

Cooperatives are owned and operated by the farmers who participate in them. This is both a source of strength and weakness. Management by the farmers means that the organization's efforts are closely aligned with the interests of the farmers. However, farmers may not have the background and experience to be good managers. Indeed, weakness of management has been identified as the primary reason for recent bankruptcies of a number of large cooperatives in California.²⁰

While cooperatives may hire professional managers, the farmers themselves still hold the ultimate authority over the organization.²¹ There is some concern that agricultural cooperatives can't remain competitive in modern market conditions. Co-ops have a particular problem raising and maintaining capital, due to the restriction of ownership to producer members.²² However, an examination of their financial performances shows that cooperatives remain a viable force in agriculture.²³

Cooperative membership usually requires some contribution to the capital of the co-op. Cooperative governance styles vary widely. In some commodity-oriented co-ops, a member's voting strength is allocated in proportion to the volume of crop the member sells through the co-op. Other cooperatives adopt a one-member/one-vote approach. The history of agricultural cooperatives in the U.S. is largely positive, with some very notable

successes offset by occasional failures. Approaches to avoiding such failures will be discussed later in this section.

Corporation

A corporation is a “fictitious person” created by state law with the ability to conduct business to the same extent as a real person. The corporation is the original limited liability entity; its origin in the law goes back centuries. The historic purpose of corporations is to allow people to amass larger amounts of capital for a business venture than any one person might be able to alone. Limited liability was created to protect investors from potential liability arising out of the business, thus providing them with a greater incentive to invest.

The owners of a corporation – its investors – are called shareholders. The shareholders choose a board of directors to oversee the business. The board in turn hires executive officers – a president, secretary and treasurer – and other persons to directly manage the business. As the result of successive generations of managers finding new ways to defraud investors – and the resulting successive waves of corporate reform legislation – corporate law has become quite complex. While a small business can operate as a corporation without too much trouble, there are a number of legal formalities the owners must follow in order to preserve their limited liability. The law is very inflexible in this regard.

For tax purposes, a corporation maintains its status as a legal person and, like every other person, pays taxes. This means that it must pay taxes on its profit. Once the corporation’s taxes are paid and the remaining profit is distributed to the shareholders, the shareholders are in turn subject to income taxation on their shares. This is the so-called “double taxation” of corporate revenue. Corporations that are subject to direct income taxation are often referred to as “C-corporations” because of their position in the federal tax code.

As more businesses found it beneficial to operate as corporations, it became apparent that the double-dip taxation didn’t make sense for smaller businesses. While double taxation is well and good for large corporations with arms-length shareholders, it became an impediment to smaller enterprises where the owners typically ran the business themselves. The federal government created the “subchapter S” status for closely-held corporations, eliminating income tax for the corporation and only taxing the owners on the income they actually receive. This is the “S-corporation.”

Limited liability company

The increasingly widespread adoption of the corporation form by small businesses led to the problem of small-business owners failing to observe the often complicated legal formalities of corporate ownership. Also, the structure of corporate law – with its shares and shareholder meetings, directors and officers and other formalities – simply doesn’t fit the way that most small businesses are run. As a remedy, in the 1970s law professors and state legislatures developed the concept of the limited liability company (LLC) to better fit the informal practices of small businesses.

The LLC is essentially a hybrid, with the limited liability status of a corporation but the organizational requirements of partnership law. The LLC form offers much greater flexibility than the traditional corporation in structuring capital, cash flow and management. In particular, ownership (capital) rights can be allocated separately from

rights to cash flow (profit). The LLC allows for more creativity in organizing legal entities and may be a good candidate for operating this proposed small-animal slaughter facility.

The governing document of an LLC is its “operating agreement.” This is essentially a contract between all of the people involved in the company establishing how the business will be owned and operated. The owners of an LLC are referred to as “members,” while the persons empowered to run its business are known as “managers.” Members can be managers and vice-versa, or there can be no overlap at all between the two roles. The law allows considerable flexibility in structuring an LLC, thus facilitating the tailoring of a governance structure to closely fit the nature of the business.

With respect to income tax, the IRS considers an LLC to be a partnership. The LLC doesn’t pay income tax for itself; the owners pay tax on their share of the profit. This is known as a “pass-through” entity, because profit passes through the LLC and is only taxed as income to the owners. Alternatively, an LLC may make a subchapter S election for tax purposes in the same manner as a corporation.

Nonprofit (tax-exempt) corporation

The traditional corporation and the LLC both require owners to contribute capital to the organization. In contrast, a nonprofit corporation has no owners (and therefore no profit). A nonprofit corporation can engage in business activities, but to the extent it has positive cash flow the profit can’t benefit any particular person. Nonprofit corporations are created by state law but are likewise subject to significant federal tax considerations.

While a business corporation is ultimately governed by its shareholders, all authority in a nonprofit corporation is exercised by its board of directors. A nonprofit corporation may be organized to operate with or without members. A member-based nonprofit may give members the ability to appoint its directors or give them no authority at all, or devise a governance structure somewhere between those extremes.

As noted earlier, a corporation is a fictitious person, but, like all persons, must pay its taxes. This applies to nonprofit corporations as well. But the federal government and the states recognize that most nonprofits are formed for some sort of public benefit and have created exemptions from taxation for those that qualify. An organization formed for a charitable, educational or scientific purpose may apply for tax-exempt status with the IRS pursuant to section 501(c)(3) of the Internal Revenue Code. As long as the organization can demonstrate that its mission falls within the IRS guidelines for “charitable, educational or scientific,” it can qualify. Economic development purposes usually qualify as charitable or as supporting social welfare, which would qualify this proposed slaughter facility for tax-exempt status. If the organization has income from non-qualifying activities, it would have to pay tax on that income but wouldn’t necessarily lose its overall status.

In its application for tax-exempt status, the organization must demonstrate that it meets the federal definition of charitable or as advancing social welfare. To qualify, a narrative description of the facility’s mission and methods should emphasize the following:

- The economic distress of the region and/or that of the farmers served by the proposed facility. This would include transition from tobacco cropping, the

widespread financial hardship of farmers in general and the lack of access to capital to finance growing farm operations.

- The absence of a market-based solution for farmers seeking to increase production of poultry and rabbits.
- The need to combat community deterioration.²⁴
- The advancement of economic opportunity for farmers.²⁵
- The development of property in an economically disadvantaged community.²⁶
- The general benefit to the public from increased employment and income to farm communities.
- That the situation is comparable to an organization providing loans to capitalize to underserved businesses or a business incubator, both of which qualify for tax-exempt status.²⁷

Entrepreneurial nonprofit

The past decade has seen the emergence and rapid growth of a new type of nonprofit organization. Generally known as “social entrepreneurship,” this approach applies the strategies and methods of business to address economic development and other social problems. An entrepreneurial nonprofit is not a distinct legal entity but rather a style of organization and leadership. It combines the “can-do” qualities of business ventures with the mission-based approach of a nonprofit organization. Such organizations are oriented toward action and innovation and take a businesslike approach to finances and to obtaining results.

The Social Enterprise Alliance defines a social enterprise as an “organization or venture that advances its social mission through entrepreneurial, earned income strategies.” It is characterized by a focus on revenue and financial sustainability. One way to understand this concept is to drop the term “nonprofit” and instead think “non-stock” or “non-owned.” These organizations operate as business enterprises with a public mission.

With ordinary businesses, profits are the ultimate measure of success. In social enterprises, such measures as job creation, member/user income and community impact are used. Such enterprises must be profitable at a basic level, because without positive cash flow they would be unable to operate. As consultant and author Stephen Covey puts it, “No money. No mission.” The difference is that revenue can come from donors as well as customers. Any profits generated do not benefit owners or shareholders but are instead reinvested to advance the mission of the organization.

The purpose of this proposed facility is to make poultry production more profitable for the users or members, not to produce income for an investor group. The “social enterprise” approach is thus a good model for the facility, regardless of the specific legal structure adopted.

We will examine the entrepreneurial nonprofit in greater detail below.

Dual status

North Carolina law allows a cooperative to hold dual status as a nonprofit corporation.²⁸ A cooperative must have members, and those members needn’t have stock. A nonprofit

corporation may have members or not, and those members needn't have ultimate authority over organization. A non-stock cooperative can therefore also be a membership nonprofit corporation. This would allow such an entity to seek governmental resources and private donor benefits available to either form of entity.

Dual entities

Another dual form worth considering is a nonprofit corporation married to a limited liability company. The nonprofit could seek capital through grants and government funding. The LLC – wholly or partially owned by the nonprofit – would serve as the operating entity to run the facility. This would further enable a future spin-off of the operating LLC should the facility prove to be profitable and self-sustaining. Because the LLC's ownership of the facility would be in furtherance of the nonprofit's economic development mission, it would retain its tax-exempt status. And because the LLC is a pass-through entity, it wouldn't be subject to taxation.

Government participation or ownership

Local government entities in North Carolina have broad powers to achieve the goals of their citizens.²⁹ Economic development is certainly a proper purpose of local government, and this facility without doubt would be an economic development effort. The law reads:

(a) Each county and city in this State is authorized to make appropriations for the purposes of *aiding and encouraging the location of manufacturing enterprises*, making industrial surveys and locating industrial and commercial plants in or near such city or in the county; encouraging the building of railroads or *other purposes which, in the discretion of the governing body* of the city or of the county commissioners of the county, will increase the population, taxable property, *agricultural industries and business prospects* of any city or county. These appropriations may be funded by the levy of property taxes pursuant to G.S. 153A-149 and 160A-209 and by the allocation of other revenues whose use is not otherwise restricted by law.

(b) A county or city may undertake the following specific economic development activities. (This listing is not intended to limit by implication or otherwise the grant of authority set out in subsection (a) of this section.) The activities listed in this subsection may be funded by the levy of property taxes pursuant to G.S. 153A-149 and G.S. 160A-209 and by the allocation of other revenues whose use is not otherwise restricted by law.

(1) A county or city may *acquire and develop land for an industrial park*, to be used for manufacturing, assembly, fabrication, processing, warehousing, research and development, office use, or similar industrial or commercial purposes. A county may acquire land anywhere in the county, including inside of cities, for an industrial park, while a city may acquire land anywhere in the county or counties in which it is located. A county or city may develop the land by installing utilities, drainage

facilities, street and transportation facilities, street lighting, and similar facilities; may demolish or *rehabilitate existing structures*; and may prepare the site for industrial or commercial uses. A county or city may convey property located in an industrial park pursuant to subsection (d) of this section....

(4) A county or city may acquire or *construct one or more “shell buildings,”* which are structures of flexible design adaptable for use by a variety of industrial or commercial businesses. A county or city may convey or lease a shell building or space in a shell building pursuant to subsection (c) of this section....³⁰ (emphasis added)

With such an array of economic development powers available, this proposed facility could obtain tremendous leverage from one or more local governments. Local governments are becoming more creative in their economic development pursuits.³¹ A municipality may be more comfortable partnering with an independent organization to advance economic development goals rather than operating the enterprise directly. Such a public-nonprofit arrangement would function in similar fashion to the dual-entity option noted above.

North Carolina prohibits agencies of the state government from operating businesslike enterprises to sell goods or render “services to the public ordinarily and customarily rendered by private enterprises....”³² This law, commonly known as the Umstead Act, would likely prevent an agency such as the Department of Agriculture from operating the facility directly or from leasing a building to it. However, counties and municipal governments are specifically exempted from this prohibition.³³ The Umstead Act represents the tension between state government efforts to serve the public in diverse ways, as well as serve its own needs, and the reasonable desire of private business to serve those needs.

The list of Umstead Act exceptions is long and includes small-business incubator activities by community colleges, “Millennial” campuses of the University of North Carolina system and any activity that “furthers the mission of the University.”³⁴ A small-business incubator provides an inexpensive location, overhead and support services for new businesses, “without which, the likelihood of success of the business would be greatly diminished.”³⁵ Such support, however, is limited to 24 months.

The Millennial campus program was initiated by the General Assembly specifically for regional economic development purposes.³⁶ Millennial campuses have now been initiated at several University of North Carolina institutions, patterned on the success of the Centennial Campus at NCSU. The Centennial Campus, although at first controversial, was developed to foster public-private partnerships among the university and businesses and to promote technology transfer, entrepreneurship and startup businesses – with hotels, restaurants and conference facilities being featured in subsequent plans. In contrast to small-business incubators at community colleges, in which the tenancy of any

new business is limited to 24 months, the public-private relationships of Millennial campuses are open-ended.

Such exceptions show a trend by the Legislature to favor economic development activities by state agencies, in particular where private businesses have left a gap. While the focus has been on technology, there is a strong argument that such “low-tech” enterprises as farming and food production have been underserved by private capital and are suitable candidates for governmental economic development support.

The actual structure of dual-entity and public-nonprofit organizational schemes can take many forms. Recalling the analogy of the orchard and its fruit, one entity could own the capital (the orchard) and the operating entity could manage it (harvest the fruit).

Counties and municipalities are empowered to create a local economic development commission with the same powers as the regional commissions.³⁸ This is in addition to the authority of two or more counties to jointly form an economic development commission pursuant to Chapter 153A, Article 19 of the General Statutes. Local governments have many tools at their disposal to create public-private enterprises, should they be so inclined.

In the case of this proposed facility, the parent entity would hold title to the land, building and processing equipment and the operating entity would have exclusive rights to use the building and equipment for the benefit of the farmers. This would free the operating entity of the burden of obtaining and maintaining the capital and significantly reduce the liability risk to the parent entity. The arrangement between the two entities would be described in some sort of written contract and the rights to use of the building and equipment would be conferred in a lease. Such documents could flexibly apportion financial and liability risks between the two entities as the organizers, donors and policymakers see fit.

IV. Capital

As noted earlier, creation of this slaughter facility would require substantial capital investment to acquire use of land and a building, equipment and an initial working-capital fund to pay salaries and ongoing expenses. An ordinary business would obtain this capital from its owners. The owners may be the people actually starting the business or be outside investors. In any event, investors

Blue Ridge Food Ventures

A prime example of a dual-entity structure in North Carolina is Blue Ridge Food Ventures, a subsidiary of Advantage West. Blue Ridge Food Ventures is a commercial-kitchen business incubator developed to provide a production facility for farmers and food entrepreneurs to make value-added agricultural products and start food-based businesses.

In 1993, the General Assembly created the Western North Carolina Regional Economic Development Commission, one of several such agencies, to further economic development in the westernmost counties of the state.³⁷ That commission in turn created the Western North Carolina Regional Economic Development Non-Profit Corporation, a nonprofit corporation doing business as “Advantage West,” to advance the purposes of the commission. Advantage West formed Blue Ridge Food Ventures, LLC, in 2003 to operate the kitchen, with itself as the sole owner. Development of the kitchen was largely funded by grants from the Golden LEAF Foundation and other donors through Advantage West. While ultimately a function of the state, Blue Ridge Food Ventures and Advantage West are not subject to the Umstead Act because they are not owned or directly controlled by the state.

expect to receive a share of the profit of the business to repay them for use of their money – a return on investment.

In ordinary businesses, the profit motive is a great motivator to the managers of businesses. They desire either to prosper for themselves or to provide outside investors with enough profit to keep them from taking their capital elsewhere. This works because of the alignment between the motivations of the investors and the managers. Capital ownership is therefore an efficient form of organization.

For example, a limited liability company can be created to resemble an agricultural cooperative in structure – one member, one vote, and so forth.

But as opposed to cooperatives, LLCs allow for community investment, not just farmer investment, and the option for active management.³⁹ While this proposed facility may not be an attractive investment for traditional sources of capital, it might obtain investment from people who support its mission and who are willing and able to take the financial risk.

In any event, investors will expect to see a well-documented financial plan for the enterprise before committing their money. The organizers of the facility must demonstrate that it can operate profitably within a reasonable timeframe. Even investors who are personally committed to the mission will want a return on their investment

Conflicts of interest

In for-profit enterprises, the profit motive can affect different stakeholders in different ways. This creates a conflict of interest that can potentially harm the business. In the case of this proposed facility, the need for capital investors to receive a share of the profit means the farmers would have to pay more to use it. The farmers' costs would be greater and their profit proportionately smaller. If the mission of the facility is to help poultry farmers prosper, capital ownership would create a conflict of interest between the investors and the mission.

Another type of conflict of interest arises in some forms of agricultural cooperatives. When a grower's ownership share in the cooperative is based upon the volume of his or her participation – that is, the more produce sold through the co-op, the bigger the ownership share – the larger producers have more influence over the management of the co-op. This often leads to situations where the co-op engages in transactions that are more beneficial to the larger producers than to the members as a whole. Similarly, when co-ops are also managed by their owners, the owners more active in management tend to arrange transactions that are most beneficial to themselves.

For enterprises such as this proposed slaughter facility that have a mission broader than simply providing income to the owners, capital ownership may actually be a less efficient form of organization.

V. Profit

Regardless of the entity and ownership structure chosen, this facility must operate with positive cash flow, or profit. Profit is the cash that remains from business revenue after all expenses have been paid. If expenses are greater than revenue, the organization loses money, and losing money isn't sustainable. Without profit, the organization will perish.

As such, the facility's organizers must begin with a solid and well-documented business plan, regardless of the form of entity chosen.

In a normal business entity, typically the only source of revenue is from sales to customers. Sales revenue can come from goods or services or some hybrid of both. Customers can be the end users of a product or service or can be some intermediate buyer, such as a wholesaler or distributor.

For a non-stock or nonprofit corporation – sometimes including cooperatives – typical sources of revenue are donors of some sort. Donors include public or private foundations, nongovernmental organizations, government entities and even private individuals. With a social enterprise, sources of revenue are wide open: Sales of goods or services and grants from governments or other institutions are all vigorously pursued.

For this facility, the absence of shareholders would be more efficient from the farmers' point of view – more of the cash flows to the farmers. The notion that private capital ownership is most efficient is not universally true. While shareholders may demand greater efficiency from the enterprise, it's at the expense of other players. In ventures such as this facility, farmers and the community are higher-priority stakeholders than private owners. The challenge for a nonprofit in this situation is to develop a sense of ownership – a personal affiliation with the mission – among the community and other stakeholders without capital ownership.

VI. Investment without capital ownership

With a non-stock form of organization, this proposed facility would need to obtain capital grants from foundations, governments and nongovernmental organizations. Such sources could provide funds well beyond the scope of the users to contribute on their own. While grant financing would relieve the facility from demands for profit from investors, grant donors still expect a return on their investment in other ways.

Public and nongovernmental investors seek tangible returns, such as job creation, community benefits and other economic development results. These results must be measurable. The organizers must therefore identify the benefits that flow from the facility's mission and devise ways of measuring them before seeking capital funding.

Again, a solid business plan is essential. The organizers must document all projected startup and operating expenses and revenue sources. The business plan must demonstrate a thorough understanding of the farmers' needs and the markets to which the farmers will be selling their meat. For a nonprofit to succeed in such an environment, the methods of social entrepreneurship are almost a necessity.

VII. Social enterprise

The emergence of action-oriented nonprofit organizations is one of the most significant recent developments in the realm of community development and philanthropy. The movement began in the 1990s when successful entrepreneurs began to turn their attention to social issues.

Though no exact estimate exists on the size of the field, tax records indicate that the number of nonprofits grew by 60% between 1989 and 1998. About 250 colleges and universities offer courses or degree programs for students interested in jobs with a social focus. Most major MBA programs now offer courses or concentrations on social entrepreneurship. And there are 42 funds or foundations that invest primarily in social entrepreneurs, according to a 2002 study by Venture Philanthropy Partners.⁴⁰

This movement has gained wider recognition in the past year as Muhammad Yunus and the Grameen Bank won the Nobel Peace Prize “for their efforts to create economic and social development from below.” Yunus created the concept of “micro-credit,” which gives extremely poor people the opportunity to obtain capital in small amounts to start small businesses.

In the U.S., James Fruchterman, chairman and founder of The Benetech Initiative, just won a prestigious MacArthur Fellowship. Benetech is a nonprofit “incubator” for socially oriented technology applications such as a reading device for disabled persons and a landmine detector for use in making war-torn regions safe for returning refugees. The Grameen Bank and Benetech provided capital and support for business ventures that were not attractive to traditional investors.

While social entrepreneurship does address such social ills as illiteracy, hunger and unemployment, the term is somewhat misleading. The movement addresses a wider field of public benefit. With respect to this proposed facility, social enterprise organizations such as Appalachian Sustainable Development in southwest Virginia and the Appalachian Center for Economic Networks (“ACEnet”) in southeastern Ohio both present models for nonprofit organizations that create economic benefit for farmers. The vision statement for the latter organization is instructive:

ACEnet will be recognized as the region’s most effective catalyst of entrepreneurial and community creativity. Our activities will identify and develop under-utilized and untapped resources through collaboration, partnerships and innovation. These activities will result in expanded impact and scale of operations, enabling large numbers of people to fully participate in the healthy economy of the future.

The social enterprise approach is a radical departure from the slow, process and analytical orientation of traditional nonprofits. Tom Suddes, a leader in the social entrepreneurship realm, describes this viewpoint (in his unique way) as follows:

1. NO MORE NOT-FOR-PROFIT.

We must stop defining ourselves in the *negative*. Instead of focusing on what we’re *not* ... let’s focus on what we’re *for*...
IMPACT!!!

Note: No one involved in a ‘*not-for-profit*’ organization wakes up in the morning and shouts “YEE HAW! We don’t get to make any money today!”

2. YOUR IMPACT DRIVES YOUR INCOME.

Therefore, the goal of the organization is not “FUNDRAISING.” The only LIMIT to the SIZE and SCOPE of your INCOME is the SIZE and SCOPE of your IMPACT.

With all due respect, NO ONE (reading this) is involved with an organization whose INCOME matches their IMPACT.

Covey says, “No money. No mission.” I would add this corollary, “No mission. (IMPACT) No money. (INCOME)”

3. JUST ASK.

This is my *answer to everything*.... It will be a stand-alone book. It soon could become a major motion picture. I cannot emphasize the power of this *action statement* enough. It literally encompasses the entire *solution to funding your vision*.⁴¹

Following on the “No money. No mission” directive, Suddes also says that a key strategy for all nonprofits must be to *commit to sales*. As noted earlier, sales are key to survival of a for-profit business. This is vitally true for social enterprises as well. But where a mainstream business only worries about selling its products or services, a nonprofit must sell to all of its stakeholders.

Under this approach, this proposed slaughter facility’s customers include not only the farmers to whom it sells processing services; the foundations and governmental organizations that provide capital financing are also customers. In a sense, the facility will provide them with economic development services. And the people who buy meat from the farmers who use the facility are customers as well. This sales process will be an ongoing activity for every type of customer. Doing it well will ensure the facility’s continued success.

Triple bottom line

While social enterprises are relentlessly bottom-line oriented, they often pursue what is called “the triple bottom line.” In practical terms, triple bottom line accounting means expanding the traditional company reporting framework to take into account environmental and social performance in addition to financial performance. The phrase was coined by John Elkington, co-founder of the business consultancy SustainAbility, in his 1998 book *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*.⁴²

While many for-profit businesses are adopting the triple bottom line as a measure of corporate ethics, nonprofit organizations are uniquely situated to pursue its ideals. Traditional capital demands optimizing returns on investment. But the investors in a social enterprise don’t look to profits as a sole measure of success. For this facility, pursuing the triple goals of financial sustainability, community benefit and environmental impact may indeed be consistent with the goals of the donor organization(s). Developing a triple bottom line reporting system at the outset would allow the facility to show its measurable results to these funders.

VIII. Packers and Stockyards Act: Federal regulation of poultry processing

Another important consideration for the facility is federal regulation of the meat-processing industry. The Packers and Stockyards Act (PSA) was enacted by Congress generations ago as a response to the anticompetitive practices of an oligopolistic meat-packing industry. While that industry has actually consolidated further since that time, the act still has broad impact and continued value to farmers:

PSA prohibits unfair, unjustly discriminatory or deceptive trade practices by packers, live poultry dealers, market agencies, and dealers. Specifically, the Act prohibits any undue or unreasonable preferences given to any seller, apportioning the supply of animals if it creates a monopoly, and the manipulation of prices. Specific examples of unfair practices under PSA include paying with a bad check or not paying cash sellers promptly. In addition, short weighing is an unfair trade practice.

The Act provides a number of financial protections for sellers by requiring prompt payment, creating a trust in favor of unpaid cash sellers, and requiring certain entities to be bonded.⁴³

While the PSA was largely intended to protect farmers selling to the meat-processing industry, its provisions may affect smaller operations in some ways. The act defines “packer” as follows:

When used in this chapter the term “packer” means any person engaged in the business

- (a) of buying livestock in commerce for purposes of slaughter, or
- (b) of manufacturing or preparing meats or meat food products for sale or shipment in commerce, or
- (c) of marketing meats, meat food products, or livestock products in an unmanufactured form acting as a wholesale broker, dealer, or distributor in commerce.⁴⁴

Subsection (b) would certainly include the facility as a “packer.” The act only extends to packers working in interstate commerce, but “commerce” is defined rather broadly. Indeed, one of the purposes of the facility is to allow farmers to sell meat into bigger markets. It’s more prudent to assume that the PSA applies to the facility and plan accordingly.

While large-scale market manipulation is certainly not a concern, the act could still create administrative or civil liability in situations where the facility could be accused of favoring one producer over another in pricing or scheduling or otherwise engaging in unfair practices.⁴⁵ For this reason, the facility must from the outset establish policies and procedures to prevent the possibility of such unfair treatment with transparent and balanced methods. The facility should also be made available to producers from other

states, as limiting services to North Carolina farmers would be a preference with respect to locality.⁴⁶

These concerns are relatively slim in scenarios in which the facility only provides processing services to poultry or rabbit farmers. Another regulatory realm under the PSA would arise should the facility enter lines of business in which it owns or brokers the animals processed there. But that's beyond the scope of this discussion. While it may make sense in the future to use the organization to collectively market its members' products, the facility shouldn't get into such situations without further consideration of these regulations and an identified need among the producers it serves.

North Carolina's poultry inspection laws would similarly define the facility as an "Animal Food Manufacturer."⁴⁷ This includes the processing of rabbits as well as poultry.⁴⁸ The scope of the law is limited to food-safety issues and would not affect the nature of the facility's operations, so long as sanitation and labeling regulations are properly followed.

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Revenue Ruling 2006-27

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North Carolina Business Corporation Act, North Carolina General Statutes, chapter 55.

North Carolina Nonprofit Corporation Act, North Carolina General Statutes, chapter 55A.

North Carolina Limited Liability Company Act, North Carolina General Statutes, chapter 57C.

The Umstead Act, North Carolina General Statutes § 66-58.

The Centennial Campus, the Horace Williams Campus, and the Millennial Campuses Financing Act, North Carolina General Statutes, chapter 116, Article 21B.

Counties, North Carolina General Statutes, chapter 153A.

Economic Development Commissions, North Carolina General Statutes, chapter 158, article 2.

Cities and Towns, North Carolina General Statutes, chapter 160A.

The Packers and Stockyards Act, United States Code, Title 7, Chapter 9, sections 181-229 (2000, 2002)

Other Resources

National Cooperative Business Association

<http://www.ncba.coop>

1401 New York Ave., NW, Suite 1100

Washington, DC 20005

(202) 638-6222

National Council of Farmer Cooperatives

<http://www.ncfc.org>

50 F Street NW, Suite 900

Washington, DC 20001

(202) 626-8700

North Carolina Center for Nonprofits

<http://ncnonprofits.org>

1110 Navaho Dr., Suite 200

Raleigh, NC 27609

(919) 790-1555

Section Ten: Federal and State Regulations Affecting Poultry Processing Plants Operating in North Carolina

I. Intro

For many small-scale poultry and rabbit producers in North Carolina, there is a great deal of confusion about regulations that pertain to their operations. A careful reading of the North Carolina Poultry Products Inspection Act (NCGS 106-549.15-49 to 106-549.15-69) reveals a number of clauses that appear to researchers as ambiguous or even inconsistent with other parts of the law. In interviews, growers often expressed a lack of knowledge of state and federal inspection regulations. Some growers who are currently selling meat products from their farms were not aware of whether they were in compliance with such laws and therefore were reluctant to discuss actual business activity, including production volumes and marketing strategies.

The purpose of this section is to highlight those regulations on small-animal slaughter that are most pertinent to the small-scale producer and to identify those regulatory options that may be available for a small-scale small-animal slaughter facility.

Developing a comprehensive HACCP plan is of critical importance for the operation of a slaughter facility. In September 1999, the USDA's Food Safety and Inspection Service (FSIS) published the *Guidebook for the Preparation of HACCP Plans*. This document should serve as the basis for developing the project's HACCP plan for raw uncooked poultry, and is available on the web at:

www.fsis.usda.gov/OPPDE/nis/outreach/models/HACCP-1.pdf

In addition, FSIS has published the *Generic HACCP Model for Raw, Ground Meat and Poultry Products*, available at:

www.fsis.usda.gov/OPPDE/nis/outreach/models/HACCP-3.pdf

Regulatory authority for inspection comes from the Federal Poultry Products Inspection Act (21 U.S.C. 451 et seq.) and the North Carolina Poultry Products Inspection Act. Federal poultry-inspection regulations can be found in 9 CFR Part 300 to 500 and state regulations are found in North Carolina General Statutes 106-549.49-69.

Under state law, regulations pertaining to the inspection of poultry products also apply to rabbits.

II. Exemptions from inspection for on-farm slaughter

A common consensus among producers is that state or federal inspection of poultry slaughter isn't required for on-farm processors who slaughter no more than 1,000 chickens, rabbits or other small fowl (raised on their own farms) per year, with the exception of turkeys, which are exempt from inspection for on-farm processors who slaughter not more than 250 turkeys per year.

While legislation is clear that inspection exemptions exist for small-volume on-farm slaughter, there is less clarity regarding how such poultry can be sold or distributed. Regulatory officials have in the past stated that exempted meat products that are slaughtered on-farm can only be retailed directly to consumers from the farm – i.e., such meat products may not be transported off the farm for sale to consumers, wholesalers or restaurants.

However, NCGS 106-549.62, titled “Intrastate operations exemptions,” lists, in subdivision (a), among exemptions to state inspection, the following:

- (6) The slaughtering and processing of poultry products by any poultry producer on his own premises with respect to sound and healthy poultry raised on his premises and the distribution by any person of the poultry products derived from such operations, if, in lieu of other labeling requirements, such poultry products are identified with the name and address of such poultry producer, and if they are not otherwise misbranded, and are sound, clean, and fit for human food when so distributed; and
- (7) The slaughtering of sound and healthy poultry or the processing of poultry products of such poultry by any poultry producer or other person for distribution by him directly to household consumers, restaurants, hotels, and boardinghouses, for use in their own dining rooms, or in the preparation of meals for sales direct to consumers, if, in lieu of other labeling requirements, such poultry products are identified with the name and address of the processor, and if they are not otherwise misbranded and are sound, clean, and fit for human food when distributed by such processor.

These exemptions appear to indicate that poultry slaughtered on-farm may in turn be distributed to consumers, restaurants, hotels and boardinghouses. The omission in subdivision (a) (7) of wholesalers and food retail establishments (grocery stores and supermarkets) implies that the intent of the law is to prohibit un-inspected poultry sales to those entities.

Subdivision (c) of NCGS 106-549.62 further states:

No exemption under subdivisions (a)(6) or (7) or subsection (b) shall apply to any poultry producer or other person who slaughters or processes the products of more than 5,000 turkeys or an equivalent number of poultry of all species in the current calendar year (four birds of other species being deemed the equivalent of one turkey).

Clearly, no exemptions to the N.C. Poultry Products Inspection Act may apply to producers slaughtering more than 5,000 turkeys or 20,000 chickens or rabbits in a calendar year. The legislation further narrows who is exempt from the law in subdivision (e) of the same statute:

(e) The provisions of this Article shall not apply to poultry producers with respect to poultry of their own raising on their own farms if (i) such producers slaughter not more than 250 turkeys, or not more than an equivalent number of birds of all species during the calendar year for which this exemption is being determined (four birds of other species being deemed the equivalent of one turkey); (ii) such poultry producers do not engage in buying or selling poultry products other than those

produced from poultry raised on their own farms; and (iii) such poultry moves only in intrastate commerce.

A reading of these subdivisions seems to imply that exemptions shall not apply to those slaughtering more than 5,000 turkeys or 20,000 rabbits or poultry and shall apply to those slaughtering not more than 250 turkeys or 1,000 rabbits or poultry. The law seems ambivalent as to whether it applies to those slaughtering from 250 to 5,000 turkeys and from 1,000 to 20,000 chickens. A policy for inspection of this level of production, a state sanitary inspection, is discussed below.

Despite a perceived inconsistency between subdivisions (c) and (e), exemption to the N.C. Poultry Products Inspection Act in practice seems to apply only to those on-farm operations slaughtering not more than 250 turkeys or 1,000 chickens, rabbits or other small fowl.

Finally, subdivision (g) of NCGS 106-549.62 gives final authority over who is or is not exempt to poultry product inspection to the North Carolina Commissioner of Agriculture:

(g) The Commissioner may by order suspend or terminate any exemption under subsections (a) or (b) of this section with respect to any person whenever he finds that such action will aid in effectuating the purposes of this Article. (1971, c. 677, s. 15.)

Therefore, the North Carolina Poultry Products Inspection Law may apply, at the discretion of the commissioner, to anyone engaged in poultry production.

III. Types of inspection

State MPID sanitary inspection

As the law is currently interpreted and enforced by state inspectors, individuals who process between 1,000 and 20,000 chickens or rabbits of their own raising (or between 250 and 5,000 turkeys) for wholesale or resale are required to do so in a facility that is inspected for sanitation by the Meat & Poultry Inspection Division (MPID) of the North Carolina Department of Agriculture & Consumer Services (NCDA&CS). This policy allows state inspectors to inspect a facility for proper sanitation but does not mandate on-site physical inspection of carcasses during slaughter and processing.

At this time, the state doesn't have any producers known to fall under this level of inspection.

Slaughter of over 20,000 chickens or rabbits requires that such animals be slaughtered in a facility that is state or federally inspected or that falls under Talmadge-Aiken establishments (see below).

State plants

State plants are under NCDA&CS inspection and are inspected daily by trained meat and poultry inspectors. Animals scheduled for slaughter and carcasses of slaughtered animals are inspected for disease and condemned by a veterinarian if necessary. Products from these establishments are labeled "Inspected and Passed by N.C.D.A." These products can be sold anywhere within the state of North Carolina. These establishments may also slaughter and/or process Custom Exempt products, including, if kept separate from inspected products, wild game.

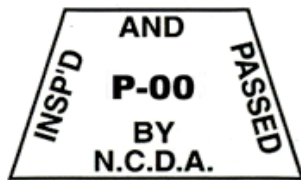
NCDA&CS does not currently conduct inspections in plants processing poultry within the state of North Carolina. However, MPID has indicated a willingness to have trained inspection personnel available should a small-scale poultry plant be developed where poultry is slaughtered and initially for sale strictly within North Carolina.

Talmadge-Aiken establishments

According to the MPID Meat & Poultry Inspection Information Statement, Talmadge-Aiken (TA) establishments are inspected daily by trained state meat and poultry inspectors. The only difference between these establishments is that the state-inspected ones may sell their products in North Carolina only and the TA establishments may ship product outside the state. Poultry products produced in these establishments are “Inspected for Wholesomeness by USDA.” They bear a round USDA inspection legend and may be shipped anywhere in the U.S. or exported to foreign countries. These establishments may also slaughter and/or process Custom Exempt products including wild game if kept separate from inspected products.

A third designation, Custom Plants, allows for processing of meat that is not for sale.

All inspected poultry products carry either a state inspection legend or a USDA inspection legend, as exemplified below:



NCDA Inspection Legend



USDA Poultry Inspection Legend

Federal inspection

Firms that slaughter poultry for interstate commercial sale in North Carolina are required to use inspection services provided by the USDA’s Food Safety Inspection Service. With federal inspection, processors can sell their product out of state and can obtain export certificates for export product sales from a federally inspected facility. In order to obtain federal inspection, an entity must apply for inspection and develop a HACCP program.

As part of the application process for federal inspection, Sanitation Standard Operating Procedures (SSOPs) need to be developed in accordance with Food Safety and Inspection Service (FSIS) Sanitation Requirements for Official Meat and Poultry Establishments.

SSOPs cover everything from grounds and pest control to light, ventilation, plumbing, sewage disposal, water supply, equipment and dressing rooms.

The SSOPs that are developed must also address equipment and supplies, sanitary operations and employee hygiene. Once the SSOPs have been accepted and signed by the establishment, such procedures must be routinely monitored. Record keeping must be maintained to substantiate the implementation and monitoring of the procedures as well as any corrective actions taken. FSIS will verify the adequacy and effectiveness of the SSOPs. SSOPs include plans for testing poultry products for salmonella and *E. coli*. Plant personnel (quality-assurance personnel, for example) may also do such testing, with records being reviewed by FSIS personnel. Swab samples collected by quality-assurance personnel can be sent to private food-safety testing labs for analysis.

Once SSOPs are developed, it's possible for the establishment to complete and submit FSIS application # 5200-2 for federal meat, poultry or import inspection (in accordance with the requirements of the federal Poultry Products Inspection Act). In order to obtain federal inspection, a poultry processing plant must develop an HACCP program. Such a program involves a hazard analysis to determine the food-safety hazards reasonably likely to occur in the production process and identify the preventive measures the establishment can apply to control those hazards. (Title 9 - Animals and Animal Products, Chapter III - Food Safety and Inspection Service, Dept. of Agriculture, Part 417 - Hazard Analysis and Critical Control Point Systems) (Section 417.2)

Whenever a hazard analysis reveals one or more food-safety hazards that are reasonably likely to occur, a written plan must be developed by the establishment covering every product produced by that establishment. For purposes of this discussion, the products most likely produced by the plant will be limited to slaughter; raw product, not ground; and raw product, ground. The rest of the HACCP product classifications involve thermally processed, shelf-stable, heat-treated and fully cooked poultry products. Separate HACCP programs would have to be developed should the facility consider further processed products for possible production in the future.

The HACCP program may or may not be pre-approved by FSIS but must be strictly followed, with complete records kept, once the applying establishment signs off on the plan and adopts it. The regulations contain specific requirements as to corrective actions, validation, verification and reassessment of the program, as well as record keeping, training and agency verification. The burden of developing the plan is placed squarely on the shoulders of the applicant. The FSIS website (www.fsis.usda.gov) contains a generic HACCP plan for consideration. As part of the HACCP process, a plant recall plan must be formulated in the event that product that might be contaminated or otherwise unsafe is actually distributed in commercial channels. The plan needs to describe specific methods of communicating to the public the potential dangers and how the product can be identified.

IV. Plant design and review

In order for a processing plant to obtain federal inspection, it's very useful to contact the Property and Construction Division of NCDA&CS to obtain advice and assistance with the preparation of the schematics for the plant. While plant designs were formerly pre-

approved by USDA, this is no longer the case. With the adoption of the HACCP program, USDA no longer pre-approves plant designs nor equipment utilized in them.

NCDA&CS-MPID has another document, titled “Coming Under Inspection for Small Processing Plants,” that serves as a checklist for what is needed to gain approval for inspection, addressing facilities, chemicals, product separation and more. Equipment and materials should comply with 21 CFR, Parts 170-190 of the Food and Drug Administration (FDA) regulations.

Once processing plant plans and equipment have been reviewed, the facility should be built in accordance with those reviews. Deviation from plans that have been reviewed could result in trouble obtaining federal inspection in the finished facilities. While utilizing the services of NCDA&CS’s property division for schematics and flow diagrams is no guarantee of obtaining inspection, the division’s staff is aware of what’s necessary to be in compliance with state and federal regulations relating to sound HAACP program development and management. Construction/building permits will have to be applied for and obtained on a local basis.

V. Environmental regulations

Among the most important environmental regulations for a project of this nature are those concerning use and treatment of wastewater. According to an official at the North Carolina Department of Environment and Natural Resources (DENR) Division of Water Quality (DWQ), facilities that are accessing a municipal or county sewer system and are using 25,000 gallons or more of water a day must have onsite wastewater pretreatment.

Another, less burdensome environmental consideration is the disposal of offal, the solid waste materials from animals. Given the low estimated volume of production, offal can be handled efficiently with an on-site compost digester or an on-site incinerator.

Depending on where the site is located and how it’s paid for, it may be necessary to file an environmental impact statement with the State Environmental Policy Act (SEPA). NC General Statute 113A, sec. 1- 13 requires that if any project meets all three of the following criteria, an environmental document must be prepared:

- 1) An action by a state agency (such as land and money appropriations, awarding grants, issuing permits, or granting licenses)
- 2) An expenditure of public monies or private use of state land (or waters)
- 3) Has a potential detrimental environmental effect upon natural resources, public health and safety, natural beauty, or historical or cultural elements, of the state’s common inheritance

A private company’s project could meet the criteria, as the SEPA requirement isn’t limited solely to public projects.

Public monies comprise all expenditures used in the construction phases of the project that include support of the proposed activity by federal, state or local quasi-public entities. Tax credits or incentives that are available after the facility is operating are excluded.

According to DENR, defining the potential impact a project or activity may have on the environment and other resources is difficult. DENR has developed rules establishing minimum criteria based on the size and type of the project or activity. DENR states that, generally speaking, no environmental document will be required for any project that falls within the minimal criteria parameters.

Additional state air and water permits must be obtained from NC's DENR. Those lists are contained in the attachment section of this paper. DENR has an express permitting process for some of the more standard permits. (Contact DENR at (877) 623-6748; www.envhelp.org)

Provided that yearly plant slaughter doesn't exceed 100 million pounds and there's no direct discharge into lakes, streams or rivers, the proposed plant may be exempt from federal EPA standards. At the same time, however, the plant water supply must meet the potability standards listed in the National Primary Drinking Water Regulations issued by the EPA in Title 40, Protection of Environment, Chapter 1 - EPA: Part 141, National Primary Drinking Water Regulations (in particular, the List of Contaminants and their Maximum Contaminant Levels). The firm that builds the plant needs to obtain a letter in advance stating that the plant will be in compliance with local water standards. This letter should be on file and available to FSIS personnel for review.

VI. Other considerations

In addition to what goes on inside the plant, the establishment must also be concerned with what goes on outside with regards to the waste-disposal program and the plant's sewage-treatment system. How this is handled and what type of approvals are needed is dependent on what type of system is used (direct discharge, city sewer, lagoon, etc.) and where the facility is located. In particular, the state will want to know how mortality and condemnations will be handled with regard to disposal, as well as how offal will be disposed of. These issues are primarily state and local related, although the EPA can come into play with regard to water, depending on how many head of poultry are slaughtered in a given year. The issues may also vary by community, so it's important to contact city and/or county officials in locations that are under consideration for site selection for specific requirements.

The EPA requires that a Toxic Release Inventory (TRI) spreadsheet be prepared by poultry processors each July for chemicals manufactured, processed or otherwise used during the previous calendar year. The key issues for processing plants are aqueous ammonia and nitrate compounds that are "coincidentally manufactured as a byproduct" from proteinaceous materials such as fecal matter and blood. The National Chicken Council (NCC) provides a spreadsheet program for use by processors. (For a copy, contact Steve Pretanik of the NCC at (202) 296-2622.)

Another consideration for poultry processors is that of product labeling. Both the federal government and the state have systems by which labels can be pre-approved, which is required prior to use. NCDA&CS-MPID can preview and approve labels, as can FSIS. Each has information on their respective websites as to what information must be provided on food labels. Check the following website to determine what label content must be approved by FSIS:

http://www.fsis.usda.gov/Regulations_&_Policies/Labels_Requiring_Review/index.asp

Processors may also want to have their product graded for quality through services offered by the USDA Agricultural Marketing Service. While inspection is mandatory, grading for quality is optional and is available through federal graders on a user-fee basis. Grading may be of assistance in marketing and sales and is mandatory if product is to be sold to school foodservice (www.ams.usda.gov/poultry/regulations/CFR70.doc).

Flock testing for diseases is a separate issue from final product testing for such things as salmonella and *E. coli* and is handled by state diagnostic labs. (For additional information, contact NCDA&CS-Veterinary Division at ncvdl@ncmail.net. Dr. David Marshall is the state veterinarian and can be reached at (919) 733-7601.)

Poultry firms transporting chickens or turkeys to processing plants appear to be exempt from certain requirements under state Department of Transportation regulations. For example, poultry live-haul outfits aren't required to cover their trailers and aren't impacted by state declarations of light-duty roads when the North Carolina DoT has designated such roads as such, and which are therefore off limits to many commercial transporters.

The plant will also need to be in compliance with such laws and regulations as commercial sales licenses and business licenses, along with registering with the IRS and the state for tax identification purposes. It will also need to be registered with FDA as a food-production facility as required by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. (Interested parties can register on the web at www.cfsan.fda.gov)

VII. How to obtain state inspection

Following is the procedure for obtaining a state inspection:

Application for Inspection

1. Complete MPID Form-1f, Application for State Meat and Poultry Inspection. Make sure all blocks are completed. If something does not apply, indicate so by placing "N/A" or "NONE" in the block.
2. The MPID Form-1f should be submitted to the Raleigh office at the address on our Contact Information page. It will be reviewed and forwarded to the Area Veterinary Supervisor in the area in which you are located. The area supervisor will contact you and provide further advice

Submittal Plans

1. After consultation with the area supervisor, a complete set of legible and properly prepared plans should be drawn up. It's recommended, but not required, that a competent architect or engineer experienced in laying out plans for operations under inspection be employed to prepare the drawings and specifications. Assistance may be obtained from the NCDA Marketing Division, Engineering Section, PO Box 27647, Raleigh, NC 27611 (phone: (919) 733-7912). There is no charge for this service.
2. Drawings and specifications, in triplicate, that fully and clearly illustrate and describe the applicant's plant as he proposes to have it constructed and equipped for inspection must be presented to the appropriate area supervisor. The name and address of the applicant

should be shown on each sheet of the drawings. The area supervisor will review and submit the drawings along with the completed blueprint submittal form (MPID Form 1h, Submission and Approval of Plans and Specifications) to the state director for final approval.

3. All plans should include the following:

A. Plot Plan: A plot plan of the entire premises showing the location of all buildings, railroad sidings, roadways and alleys adjoining the plant, and streams. Height and use of adjoining buildings should be indicated. The character and surfacing of roadways, driveways, streets and paving of vehicular loading areas and alleys also should be indicated. The north point of the compass must be shown.

B. Floor Plan: A floor plan must be submitted for each entire floor of the establishment. Each floor plan should accurately illustrate the facilities as they will exist when the establishment operates under inspection. Most floor plans should be drawn to a scale of 1/8 inch per foot. However, complicated layouts such as slaughtering departments, hog-cutting departments and large sausage kitchens will need to be 1/4 inch per foot in scale so that all necessary details can be clearly illustrated. Very large floor plans can be divided into two or more sheets by using match lines to show how the sheets relate to one other.

The essential things to show on floor plans are locations of walls, partitions, posts, doorways, windows, floor drainage openings and gutters, rail systems for conveying carcasses, principal pieces of equipment, hot and cold water hose connections, hand-washing facilities, work positions of plant employees, pipelines for moving product ingredients, lockers and benches, toilets, urinals, shelves and racks, chutes, conveyors, ventilation fans, ramps and stairways.

In addition to the drawing features, certain information must be printed on the floor plans. Include the name and use of each room, number of employees using each welfare and toilet room, room temperature, and the heights of rails, work platforms and inspection tables. The floors should be indicated as pitched to floor drains or drainage gutters. The required floor pitch is 1/4 inch per foot in areas where wet operations are conducted and 1/8 inch per foot in areas where a limited amount of water is used. Either grade lines or arrows should be used to denote the direction of floor pitch.

3. Plumbing Plan: A plumbing plan on the floor drainage system and the toilet soil lines illustrating that the two systems are separate to a point outside of the building should be prepared.

4. Specifications or Notations: Specifications or notations cover such features as source of water supply, the room finished schedule (specifying the type of finish on walls, floors, ceilings, etc.), method of sewage disposal, description of the trapping and venting of drainage lines, description of the hot-water system, means to dispel steam and vapor in workrooms and screens for outer openings that would admit flies. Notations applying to the project should be

typewritten on separate sheets, 8x10½ inches, and attached to the set of drawings, the revised sheet or the copy sheet with attached paster drawings, as the case may be.

Label Approval

Written confirmation is needed from the Labels and Standards Staff that the product labels meet the requirements of the applicable meat and poultry regulations. All labels therefore have to be approved by the state director of NCDA-MPID before product is shipped from the plant. As soon as the drawings are approved, labels should be brought into conformity with inspection requirements. The area supervisor will assist in obtaining a plant number with which to identify products.

Other General Requirements

1. Obtain certification of the water potability from the local or state health agency that has jurisdiction.
2. Obtain a letter of acceptability of the plant sewage and waste system issued by the governmental agency having jurisdiction.
3. The water certificate and waste-disposal letter must be given to the area supervisor.
4. You must build or remodel your plant as shown on the prints and notify the area supervisor that you are ready for a survey to determine conformity with approved prints.
5. Plants producing country-cured pork products (ham, shoulders, etc.) must have their processes approved prior to receiving inspection.
6. An activities schedule must be submitted to provide information on products being produced.
7. An operating schedule, detailing the hours of operation, must be submitted and approved.
8. Brands must be ordered through the Raleigh office of MPID for slaughter facilities.
9. An indelible letter specifying the method of byproduct disposal must be obtained from the office of Dr. David T. Marshall, State Veterinarian, NCDA, Veterinary Division, PO Box 27647, Raleigh, NC 27611.
10. All equipment must be inspected by the area supervisor and found to be acceptable.
11. All chemicals, soaps, etc. must have a Material Safety Data Sheet and label directions for use.
12. Letters of guarantee for all packaging materials that contact product, spice mixtures, non-meat ingredients, etc. must be obtained from the manufacturer.

Assistance Available

Most plant owners, architects and general contractors need assistance in the preparation of plans and specifications – and meat and poultry inspection technical assistance is available. These area supervisors can prevent problems before they occur and assure that the plant to be built or remodeled will indeed pass all necessary inspections to inaugurate

State Meat Inspection (see appendices). Don't hesitate to contact the supervisor in your area. Additional assistance can be obtained through the MPID office in Raleigh.

For additional information on poultry plant inspection within North Carolina, contact Dr. Steven Wells or Dr. Beth Yongue at NCDA&CS-MPID, at (919) 733-4136.

Useful Websites

www.fsis.usda.gov/regulations_&_policies/Poultry_Products_Inspection_Act/index.asp

www.agr.state.nc.us/vet/meat_poultry/pdf/agency_state.pdf

www.foodtechsource.com

VIII. Conclusion

The project team should focus on a scalable development model that is able to meet all levels of inspection, beginning with state inspection under the NCDA&CS Meat and Poultry Inspection Division. To prevent being required to install an expensive wastewater pretreatment system, the facility should be designed to use less than 25,000 gallons of water per day.

Section Eleven: Facility and Program Management Considerations

I. Introduction

Facility and program management design should be based on a consideration of desired outcomes for the overall project. Research conducted in this study indicates several assumptions about the current status of poultry and rabbit-meat production in Western North Carolina:

- Current production volumes – which comprise a range of types of meat, including chicken, turkey, rabbit and specialty niche poultry – are low.
- Producers in the region have very limited experience in growing, processing and marketing meat that's processed at a facility inspected by state or federal regulatory agencies.
- Producers are often unaware of or confused about regulatory issues affecting their businesses.
- Current production is spread over a large geographical area, with local markets defined by the particular small animals being processed and the manner in which that meat is being marketed.
- Many small-volume producers would like to expand and professionalize their meat businesses.

Reflecting the above assumptions, some suggested outcomes for this project are:

- Establishment of a facility allowing producers to have small volumes of a variety of poultry and rabbit products of their own raising processed and inspected.
- Producers become trained and gain experience in the safe and wholesome commercial growing, processing, and marketing of meat products that are state or federally inspected.
- Producers are able to understand and meet all regulatory issues affecting their businesses.
- Producers have a variety of options for marketing inspected meat, including direct marketing, wholesale distribution and participation in associations or other business entities for marketing and sales.
- Small-volume producers are able to expand and professionalize their businesses.

The process of achieving these outcomes clearly must entail an effort to include the training and education of producers as part of this project's services. Private industry is either unable or unwilling to meet the demand of independent poultry and rabbit producers in Western North Carolina for slaughter services. This project therefore should be developed as a public service effort, with a strong focus on training and educating the community of independent producers accessing its services.

The state has significant resources available in this regard, including the North Carolina A&T State University and NCSU Cooperative Extension services, the NCDA&CS Agribusiness Development Office, the Center for Environmental Farming Systems

(CEFS), the NCSU Department of Poultry Science and the NCSU Food Science Extension service. Nonprofits – including Heifer International, the Appalachian Sustainable Agriculture Project and the Carolina Farm Stewardship Association – can contribute educational and marketing resources. And local government entities – including county extension offices and small business centers – can provide core outreach and business-development services to growers.

II. Service provider partnerships

A project of this nature must develop a system of management that directs all available resources toward achieving the desired outcomes. It requires support from multiple agencies and resources and a management team that's focused on serving the community and is immediately responsive to circumstances on the ground. A partnership of service providers should be formally established to provide guidance to the project and to develop programs and policies that will ensure success.

A sufficient number of support organizations have been identified to champion the development of this project in a collaborative relationship. Some key organizations that could contribute to this project's success are discussed below.

The Center for Environmental Farming Systems

According to its website (www.cefs.ncsu.edu), NCSU and NCA&T State University established CEFS with the NCDA&CS at the Cherry Farm facility near Goldsboro in 1994. These partners work closely with state and federal agencies, nongovernmental organizations, farmers and citizens to provide agricultural research, extension and education for the state. The development of CEFS is a national model for partnership, innovation and interdisciplinary cooperation. CEFS's mission is to develop and promote agricultural systems that protect the environment, enhance rural and urban communities and provide economic opportunities in North Carolina and beyond.

In conversations with CEFS director and lead researcher Dr. Nancy Creamer, she has expressed an interest in expanding program activities beyond the Cherry Farm facility. Creamer envisions CEFS championing pilot projects and research that can directly impact communities throughout the state. CEFS has an established record of managing grant-funded projects, including projects to develop sustainable beef cow and calf production, regional and community-based food systems and market development of locally produced red meat products from independent farms. CEFS can play a constructive role in coordinating resources and services from the NCSU College of Agriculture and Life Sciences, including poultry science, food science and cooperative extension.

Contact: Dr. Nancy Creamer, Director
224 Kilgore Hall
Box 7609
Raleigh, NC 27695
(919) 515-9447
nancy_creamer@ncsu.edu

The NCDA&CS Agribusiness Development Office

The NCDA&CS Agribusiness Development Office provides assistance in planning, expansion, financing and site location for new or existing agribusiness-related industries in the state. The office has managed or played a support role for several grant-funded development projects, including the NCDA&CS Pasteurizer Loan Program for farm-based cheese producers and Blue Ridge Food Ventures, a shared-use food processing center in Buncombe County. This current feasibility study is commissioned by this office through a grant from the North Carolina Golden LEAF Foundation.

Ron Fish, NCDA&CS's assistant director of marketing, leads the Agribusiness Development Office. Fish has expressed strong interest in supporting the development of a facility for independent poultry growers and can provide assistance in coordinating support from various offices of NCDA&CS, including the Meat and Poultry Inspection Division and the Property and Construction Division.

Contact: Ron Fish, Assistant Director
Division of Marketing
Agribusiness Development Office
1020 Mail Service Center
Raleigh NC 27699-1020
(919) 733-7912
ron.fish@ncmail.net

North Carolina Agricultural Foundation, Inc.

North Carolina Agricultural Foundation (Ag Foundation) is a nonprofit, charitable and educational corporation as defined in Internal Revenue Service code 501(c) 3. The Ag Foundation was formed in 1944 to aid and promote, through financial assistance and otherwise, all types of education and research in agriculture at or through NCSU.

The Ag Foundation serves as the primary fiscal agent for many grant-funded projects and has a well-established track record in handling grants from such funders as the NC Golden LEAF Foundation and the NC Tobacco Trust Fund Commission. The Ag Foundation can play a constructive role in this project as an established nonprofit able to receive and manage grant funds.

Catherine Maxwell, director of development for the NC Agricultural Research Service, is affiliated with the Ag Foundation and works closely with CEFS grant-funded projects. Kathy Kennel is the executive director of the Ag Foundation.

Contact: North Carolina Agricultural Foundation, Inc
Campus Box 7645, North Carolina State University
Raleigh, NC 27695-7645.
(919) 515-9259 (t)
(919) 515-5274 (f)

For project implementation, multiple entities may be tasked with fiscal management, facility management and services and training and educational program management.

McDowell Economic Development Association, Inc.

The McDowell Economic Development Association (MEDA) is a 501(c)3 nonprofit organization with stated goals of recruiting new industry and working with existing industries in McDowell County. The executive director, Chuck Abernathy, also serves as

the McDowell county manager. Should the project succeed in developing on county owned land in McDowell County, MEDA could play a key organizational role by establishing a subsidiary organization to serve as the processing facility's managing entity. This would circumvent the need to immediately create a new nonprofit entity, although the facility's managing entity could be spun off from MEDA at a later date.

On January 30, 2007, the researcher met with the membership of MEDA in Marion and presented preliminary findings from this study. MEDA members expressed a high degree of interest in the concept of a pilot slaughter facility for independent small-animal producers in the region. Andy Webb, a MEDA member and the chairman of the McDowell County Commissioners, spoke in strong favor of the project, noting that it's "exactly the kind of thing" that McDowell County can support.

Executive director Chuck Abernathy then proposed a motion that MEDA would fully support the development of a pilot slaughter facility as part of an overall strategy for supporting agricultural development efforts in the county. The motion was passed unanimously.

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25 S. Garden St.
PO Box 1289
Marion, NC 28752
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(828) 652-8775 (f)
meda@mcdowell.main.nc.us

Carolina Farm Stewardship Association

The Carolina Farm Stewardship Association (CFSA) is a membership-based organization of more than 750 farmers, processors, gardeners, businesses and individuals in North and South Carolina who are committed to sustainable agriculture and the development of locally based, organic food systems. Its mission is to support and expand local and organic agriculture in the Carolinas by inspiring, educating and organizing farmers and consumers.

CFSA is a 501(c)3 non-profit organization governed by a diverse 15-member board of directors. With an increase in members, CFSA is becoming more regionalized with six local chapters across the Carolinas. These chapters develop educational programs, work on local solutions to pressing environmental and social problems and provide a direct and lively way for members to interact throughout the year with others committed to healthy food and farms in their region. CFSA provides support to local and organic food systems through promotion and marketing assistance, education and advocacy efforts and information sharing/networking.

CFSA is the lead development agency for the McDowell Farmer's Alliance. McDowell County farmer Casey McKissick is a board member of the CFSA. He reports that at the January 2007 board meeting, this project was discussed, and that the organization would have an interest in playing a development role for a small-animal slaughter facility located in McDowell County.

Contact: Roland McReynolds
Executive Director

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Pittsboro, NC 27312
(919) 542-2402 (t)
(919) 542-7401 (f)

WNC Independent Small Animal Meat Producer Association (ISAMPA)

ISAMPA is the working name for a new organization of independent livestock operators who support the development of a small-animal processing facility to meet their needs. On January 30, 2007, the researcher met with five producers at the McDowell County Cooperative Extension Service. Attendees for this meeting were:

Stephen McMurray, After Hours Farm
Jamie Ager, Hickory Nut Gap/Springhouse Natural Meats
Natalie Veres, Grateful Growers Farm
Walter Harrill, Imladris Farm
Meredith McKissick
Daniel Smith, County Extension Director
Smithson Mills, Researcher

The five producers at this meeting reviewed proposed facility designs and made recommendations concerning equipment, layout and room sizes. Also discussed was the need for demonstrated support for a project of this nature from the producers themselves, with the understanding that potential funding agencies would not likely support an effort of this scope and cost without significant grassroots support. One grower made a suggestion that an independent association of farm-based producers should be organized for this effort. By contacting respondents to the statewide survey, and through notification by listserv, the organization has received confirmation from 20 farms that they would join the organization.

Contact: Walter Harrill
Imladris Farm
wendyandwalter@bellsouth.net
(828) 628-9377

III. Lead fiscal agent

The lead fiscal agent is the legal entity with primary responsibility for funding development. In grant-funded projects, the lead fiscal agent often serves as the recipient of development funds from foundations or government entities and performs ultimate financial oversight of project implementation and management. This doesn't preclude other organizations from contributing to the project's management or development or of those organizations receiving funding from other sources to support the project in various ways.

A logical selection as lead fiscal agency is the Ag Foundation, working in close cooperation with representatives from CEFS, NCSU, NCA&T and NCDA&CS.

IV. Facility management and services

This project requires a significant investment of time, money and other resources, many of which are beyond the reach of locally based nonprofits. And while a state entity may

be better positioned organizationally to provide such resources, legal and liability considerations may restrict the amount of direct control a state entity can have in day-to-day facility operations. As such, management of a small-animal slaughter plant should probably be conducted by an organization other than a state agency. Direct state management could become problematic with issues of liability and conflict of interest. In addition, state regulations on public fiscal management – while designed to ensure public trust in government use of taxpayer dollars – can be extraordinarily cumbersome for economic development activities using private-foundation grant funds.

A nongovernmental organization (NGO) should be considered for managing the daily operations of the facility and for legally providing the service of small-animal processing. Section Nine of this report (“Legal Entity Considerations”) discusses new social-entrepreneurship organizational types for economic development, including entrepreneurial nonprofits, public-private partnerships and subsidiary organizations owned by nonprofits. For grassroots economic development activities, these organizations tend to be more adaptable and innovative than is generally the case with traditional nonprofits or government service providers. The NGO would not necessarily have to be a 501(c)3 nonprofit under IRS definitions, as the fiscal agent would likely be another entity. However, important funding agencies and foundations should be consulted on eligibility if the managing entity is not a nonprofit organization. The NGO should be the ledger holder for the plant and be the responsible legal entity for slaughter and processing of poultry and rabbits at the facility. The NGO should also carry sufficient product liability insurance. According to representatives of Farm Bureau Insurance, total product and personal liability insurance is typically calculated based on the dollar value of organizational sales and is usually less than 1.75 percent of that value. For a facility of this small scale, however, a higher minimum fee structure may be imposed by insurance agencies.

A highly capable general manager should be hired by the NGO to manage the processing facility and its services. This individual should have proper training and certification in meat handling and processing of poultry and should be given broad discretionary powers on day-to-day management. Working with service providers, the general manager should be able to implement training and educational programs for farm-based producers accessing the facility. In the initial stages of production services, the general manager may not need to be a full-time position. However, the ability to recruit the best possible person for the job may be compromised if it is not.

Based on anticipated production volumes from existing growers, staffing of a full-time crew for processing is not economically viable. In at least its earliest stages, the project will most likely need to rely on labor supplied by participating farms. Under this arrangement, farmers and their associates would receive training in the processing of poultry and/or rabbits. They would work as employees of the managing NGO during commercial processing, during which time legal control of the animals would fall to the NGO. Legal control of meat products would revert to the participating farm on removal of the meat from the premises, with all participating farms holding meat-handler’s licenses.

V. Training and educational programming

To ensure achievement of the proposed outcomes stated above, resources in the existing

agricultural support structure must participate in developing programs geared toward professionalizing the independent poultry and rabbit industry. This involves comprehensive training from hatchery to the consumer.

Proper flock management, safe and sanitary processing and handling of meat and marketing are all skills required to succeed. Kathy Bunton, an area specialized poultry agent for North Carolina Cooperative Extension, attended a meeting of interested growers and expressed strong interest in providing support services for flock management for pastured poultry and for growers using other systems of production.

CEFS can play a critical role in helping to identify best practices for small-scale poultry operations, commercializing their application on private farms and directing higher-education and research activities. Graduate students in poultry or food science could learn about small-scale processing and HACCP and other management and regulatory issues while at the same time playing roles as support staff for the general manager.

NCDA&CS can provide a variety of services. The Meat and Poultry Inspection Division, while primarily performing a regulatory function, can assist in teaching independent meat producers how to properly manufacture and handle safe and wholesome products. In the Division of Marketing, the Agribusiness Development Office can assist in helping producers develop business plans and cash-flow projections. Marketing specialists can assist in promotional campaigns and in raising public awareness of independently grown poultry and rabbit.

Training and education can be conducted by growers as well as service providers. In group meetings and one-on-one discussions, rabbit growers expressed the need for establishing a regional or statewide rabbit growers association. One grower suggested the facility could be the impetus for organizational development among rabbit growers, including developing a mentoring program for people who wish to expand or start rabbitry. Such an organization could work collaboratively with NCD&CS to develop marketing materials targeting food chains and restaurants and have a presence at food- and agriculture-industry events. The development of ISAMPA as a farmer advocacy group could provide the vehicle for this form of training and education.

VI. Governance: Considerations for facility management and services

The question of who exercises authority over the direction and operation of the facility is crucial to its success. The perceived legitimacy of that authority is perhaps even more important than the organizational structure as it exists on paper. Producers must feel that the governance of the organization is fair, transparent, knowledgeable, and shows common sense.

The governance structure must ultimately demonstrate that it understands and responds to the needs of all stakeholders. Flexibility and responsiveness are key factors in both the structure and *style* of a governance system. A conservative, bureaucratic control model may ensure that decisions are prudent and well-supported by data, but may miss business opportunities that call for a faster response or a higher degree of risk. On the other hand, an ad hoc, entrepreneurial control model may be quicker to seize opportunities and have a higher tolerance for risk, but at the potential cost of overlooking larger organizational goals or important information in the decision process.

There is evidence that better management might have averted the recent failures of some large producer cooperatives in California.⁴⁹ In the case of the Tri-Valley Growers cooperative, several strategic failings, including the inability to terminate non-productive growers and “persistent lack of focus on the selling side,” were attributed to the member-managers.⁵⁰ “Lack of attention by the board of directors” was faulted for the failure of the Rice Growers Association, along with “a ‘free-rider’ belief that members and board did not have to contribute much effort to running RGA in order to benefit from the cooperative’s strengths.” Notably, researchers identified “a fundamental gap between what members expected through cooperative membership and what was borne out in reality” in the RGA situation.⁵¹ In neither instance was the cooperative form of ownership held to be a reason for the failures. An inability to engage in long-range thinking and planning is also commonly cited as a weakness in member-governed cooperatives.

Clearly, the best-laid plans and the most carefully crafted legal structure will do little to ensure an organization’s success in the absence of important “soft” factors. Before addressing governance structures, it is important to examine these.

Participation

If they are expected to work for the benefit of this facility, farmers must obtain benefit from their participation. That benefit must primarily be monetary; the facility must work for them financially. To gain a greater degree of participation – enthusiasm – producers must feel a sense of affiliation with and ownership in the enterprise (regardless of whether that ownership is an equity share). Having a personal stake in the organization provides motivation to go above and beyond mere contractual obligation and make an effort that will contribute to the growth and well-being of the broader community of small-animal farms in North Carolina. Affiliation can significantly offset any “free-rider” motivations. This sense of affiliation is rooted in getting a fair economic deal, but is also tied to the belief that the organization understands and responds to the needs of all stakeholders.

Culture

The role of organizational culture overlays and permeates all of the previous considerations. As the saying goes, “It ain’t what you do it’s the way that you do it.” Culture is the personality and character of the organization that determines whether producers and customers will trust it with their livelihoods and their businesses. Culture drives the quality of decisions made and actions taken. Culture is intangible and can’t be legislated in a set of bylaws, but it can be created and developed through deliberate effort on the part of leaders. The early stages of developing an organization contain the best opportunities for creating culture. The organizers must think thoroughly about the culture they want to create in the facility and take that culture into consideration with every decision and action the organization makes.

Board of directors

All of the legal entities considered here are governed primarily by a board of directors. Regardless of the authority that shareholders or members may have in choosing a board, the directors will hold ultimate authority over the facility. It’s essential to establish a process for recruiting and selecting high-quality directors to ensure the project’s success.

Farmer participation in governance helps the organization stay attuned to its mission and the needs of the people it serves. Board representation by members also helps to maintain their identification and affiliation with the organization. However, as noted earlier in this report, several consistent flaws have been observed with producer-dominated boards of directors: shortsightedness, lack of strategic planning and self-interested conflicts of interest. This can be offset by deliberate inclusion of outside directors.

Participation by members of the community and experienced business people and professionals on the board of directors brings important perspective to governance of the organization. It broadens the board's collective knowledge base and complements the front-line perspective of member directors. A successful board will bring a diversity of abilities and viewpoints to bear on the challenges they must address.

The board must be oriented to the market in order to anticipate and respond to changes both in the meat-production industry and in the community of poultry and rabbit farmers throughout the state. While marketing may not be part of the facility's mission, the board must identify new opportunities for its members and create for them channels to direct sales. This is the board's responsibility.

Two modes of board selection exist in the nonprofit realm. In many member-based organizations, directors are elected directly by the membership. Other organizations have a self-perpetuating board, where new directors are chosen by the board itself. There is no legal reason why a hybrid of these two methods couldn't be implemented: Certain board seats would be allocated for members, to be chosen by the members, with other seats designated for community or industry participants.

Directors typically have a specific term of office of several years. Some organizations limit the number of terms a director can serve in order to ensure the regular introduction of new perspectives. To provide greater organizational continuity, director terms will often be staggered so that the board will always have a minimum number of experienced directors at any time. For example, a board of nine directors having three-year terms will replace only three directors each year; turnover of the entire board would take a minimum of three years.

Another director issue is liability to the organization and to third parties for failings of the enterprise. North Carolina law accords immunity from liability to directors of nonprofit corporations, provided that they aren't paid for serving as directors. (Reimbursement for expenses and compensation for non-director services provided does not count.)⁵² However, it may be necessary to compensate directors for their time if high-quality individuals are needed. And this immunity does not apply to directors of corporations, LLCs or cooperatives. To recruit and retain a good board and protect them from such concerns, the facility should obtain directors' liability insurance.

Management

Depending on the type of entity and structure chosen, the board of directors will also need to appoint specific people to be officers or hold other management positions. A business corporation or agricultural cooperative must have a president, secretary and treasurer. A cooperative must also have one or more vice presidents. A nonprofit corporation may have such officers, but isn't required to, and may instead be managed directly by the board. A limited liability company is run by its managers.

Many nonprofit corporations hire an executive director to manage their operations. The executive director is typically an employee and functions as the chief executive for the corporation. An executive director may or may not also have a voting seat on the board of directors.

Participation

What criteria must growers meet to be able to participate? This can be quite simple: They must raise poultry or rabbits, process the animals at the facility and pay a participation fee. But it also can get complicated: Is there a minimum number of animals to be processed or will a single cockerel qualify? Is the participation fee one-time or annual? Must the growers come from a specific geographic region? Resolving these boundary issues must be closely aligned with the mission of the organization.

VII. Long-term sustainability

Economic-development projects are most effective when they can achieve a level of self-sufficiency after an initial period of external financial support. This project should rely on external non-debt financing (grants) to build its infrastructure (See Section Seven, “Facility Design,” for construction cost estimates) and for operational support in its first phase of operations. This project will be beneficial to many entities for training and educational purposes. However, significant long-term external financial support for operations should not be expected.

To cover operational costs of a general manager, part-time staff, utilities and maintenance, a fee for service is recommended for the processing of poultry and rabbits. Based on industry standards determined through secondary research of other facilities, the following processing fees per animal are recommended:

Broilers	2.25/head
Rabbits	1.75/head
Turkey	6.00/head
Poulet (young chickens)	1.75/head
Other small fowl	2.50/head
Broiler cut-up and packaging	0.75/head

Based on anticipated production volumes of existing businesses who returned surveys, first-phase annual project income can be projected as follows:

Broilers	14,805 x 2.25 =	\$33,311.25
Rabbits	15,835 x 1.75 =	\$27,711.25
Turkey	2,515 x 6.00 =	\$15,090.00
Other fowl	50 x 2.50 =	\$125.00
Broiler cut-up & packaging	5,000 x 0.75 =	<u>\$3,750.00</u>
Total income:		\$79,987.50

The project should not anticipate the above production volumes in the first year of operation. This production volume should, however, be obtainable in the first few years of operation, as growers become more familiar with its services and ramp up their production accordingly. The relatively large number of rabbits anticipated for slaughter is contingent upon one producer achieving his goal of processing up to 200 rabbits per week, or 10,000 per year. Market analysis of the Western North Carolina region doesn't show sufficient demand for achieving this volume at this time, but the market for rabbit

meat is relatively strong in the northeastern U.S. Should a processor successfully enter that market, 10,000 animals per year is not beyond reach.

Annual costs of operation are difficult to establish, however anticipated expenses can be estimated as follows:

General Manager	\$35,000
G.M. Fringe	\$10,500
Part-time staff	\$10,000
Utilities	\$25,000
Cleaning and supplies	\$5,000
Insurance	\$5,000
Repairs and maintenance:	<u>\$12,000</u>
Total:	\$102,500

In its initial phase of operations, this facility is not expected to be fully self-sufficient. The ability to achieve current-account self-sufficiency is inherently tied to achieving the desired outcomes envisioned above. Professionalizing the small-scale poultry and rabbit industry will result in increased output and farmer participation, thereby increasing income and approaching a balance between project income and expenses. A reasonable timeframe for achieving financial self-sufficiency is three to five years from the beginning of operations.

Several factors can contribute toward reducing operational costs. Use of participating farmers for the labor to process their own birds will be an efficient allocation of labor resources. Because the facility will use a largely non-mechanical, manually operated processing line, breakdowns and repair costs will be low relative to highly mechanized processing facilities. The establishment of alternative fuel systems, such as the proposed methane entrapment project in Marion, can substantially lower utility costs.

IX. Conclusion

The process of attaining proper management of this project will benefit from a two-pronged approach: accessing the resources of existing large support organizations and utilizing the advantages of social entrepreneurship. One option could be to give control of facility operations to an NGO, while physical ownership belongs to the state or a local government. This model has similarities to existing relationships at Millennial campuses between the university system and private businesses. Another variation on the two-pronged approach is to have the facility land and physical infrastructure controlled by an NGO with a board of directors comprised of state and local service providers and farmers.

Of the two identified sites for possible development, one is owned by McDowell County, the other, in Fletcher, by NCDA&CS with close cooperation from NCSU. Land at the preferred location, in McDowell County, could be leased directly to an NGO for a nominal fee. At the Fletcher research station, ownership could be retained by NCDA&CS with the facility leased at a nominal fee to the NGO.

Should a state-government entity have ownership of land or facilities used in this project, the Umstead Act must be considered. As mentioned in Section Nine, North Carolina prohibits agencies of the state government from operating business-like enterprises to sell goods or rendering “services to the public ordinarily and customarily rendered by private

enterprises....” (N.C. Gen. Stat. § 66-58). Given that no private enterprises are currently providing the service of processing poultry or rabbits for independent growers in the region, the applicability of the Umstead Act should be questioned. Furthermore, the mission of the project – broadly defined as professionalizing independent poultry and rabbit businesses – does not seem to be a service that is “ordinarily and customarily rendered by private companies.”

Section Twelve: Research Conclusions and Recommended Next Steps

I. Key research conclusions

Research in this study has documented the existence of small, diversified farms located throughout the state with a strong interest in increasing production through use of an inspected slaughter and processing facility. By almost any measure, the western region of the state has the greatest unmet demand for access to a USDA- or state-inspected small-animal slaughter facility.

Based on measured levels of producer demand and potential availability of funding, researchers recommend development of a pilot plant for slaughter and processing of multiple species of poultry and rabbits. In Western North Carolina, many growers are in need of access to an inspected slaughter facility in order to increase and professionalize their production and marketing systems. These producers are currently unable to expand their businesses due to legal restrictions for growers not using state- or federally-inspected processing facilities. State law allows only up to 1,000 chickens or 250 turkeys to be processed and sold directly from a farm annually.

WNC growers are spread over a wide geographical area and are producing a variety of poultry and rabbit products. The majority of respondents in the region are directly marketing their meat to consumers, including a significant number who report marketing to restaurants. Among 30 respondents, 23 reported being in business now, while seven reported they had not yet started their meat businesses. These growers are now organizing as the WNC Independent Small Animal Meat Producers Association. This organization will be able to provide two, equally important roles. The first, as an advocacy organization, will be to adequately demonstrate and organize grassroots support for the project. The second, as a project partner, will be to receive grant funds targeted toward rural economic and agricultural development. This organization would be particularly ideal as a recipient of a Value-Added Producer Grant from USDA in fiscal year 2008.

The establishment of slaughter and processing services for small meat animal producers in the region would likely substantially increase production among growers. Using data supplied by existing small-animal producers only, research estimates an annual potential of 33,205 head of small animals processed at an inspected facility in Western North Carolina in its earliest stages of operation, with a retail value estimated at \$377,000 a year. This represents a five-fold increase from current recorded production volumes. While this production volume is quite low by industry standards, national and regional trends toward increased consumer preference for locally grown foods – along with measured demand for local poultry meat that exceeds current supply – indicates that an inspected slaughter facility that also provides extensive training and education in proper flock management, processing and marketing can serve as a powerful catalyst for developing this industry niche.

Based on a review of possible site locations – and considering preferable management and organization issues – researchers recommend a site in Marion owned by McDowell County as the most viable of available choices. Project developers should work closely with the county to secure this site through a long-term nominal lease. A suitable arrangement would be for the McDowell Economic Development Association, Inc. to

lease this site for \$1 a year, with one-year extension options guaranteed over a minimum 10-year period.

The recommendation is for a facility design with a maximum daily throughput of not more than 1,000 chickens a day that can be efficiently operated with a minimal number of workers. The design should be scalable to allow for future expansion and to meet regulatory requirements for every level of inspection, beginning with state inspection under the NCDA&CS Meat and Poultry Inspection Division. A viable strategy for achieving USDA inspection is to first secure state inspection under MPID. Following an initial period, the facility can then apply for Talmadge-Aiken designation that will allow for USDA inspection while still using state MPID inspectors to provide the service.

Researchers estimate basic construction costs for a small facility in Marion, including site preparation and utility tie-ins, at \$450,000. Basic costs of acquiring and installing processing equipment are approximately \$100,000, bringing total physical infrastructure development costs to an estimated \$550,000.

The project is recommended to charge processing fees similar to those found at other facilities in the country catering to independent growers. Using the production figures of 33,205 animals a year in its first phase of operations, project leaders can anticipate annual processing revenues of approximately \$80,000.

Costs of regular operation are estimated at just over \$100,000 a year, including salaries, utilities and maintenance, along with liability insurance and worker's accident compensation.

Project management costs exceeding revenues from processing fees are estimated at \$200,000 over a five-year period. This includes costs of project management during project implementation and to cover the spread between revenues and expenses. A reasonable timeline for achieving current account break-even is three to five years from the time of opening.

Options for forms of legal organization include an agricultural cooperative, business corporation, nonprofit corporation, limited liability company, a hybrid of these or a hybrid government/corporate entity. Researchers recommend that the McDowell Economic Development Association, Inc. establish a subsidiary limited liability corporation that is wholly owned by MEDA to operate as the legal entity providing facility management and processing services for growers. This entity will enjoy the same tax status as the parent organization as a nonprofit 501(c)3 organization.

A separate board of directors can be charged with oversight of this subsidiary. To ensure maximum multi-agency participation, the board is recommended to be comprised of delegates appointed by the following agencies and organizations:

- One appointee from the NC Commissioner of Agriculture
- One appointee from the dean of the NCSU College of Agriculture & Life Sciences
- One appointee from the McDowell County Commissioners

- Two appointees from the WNC Independent Small Animal Meat Processors Association, consisting of one farm-based producer who is engaged in poultry production and one appointee who is engaged in rabbit-meat production

This five-person board would direct all operation of the facility's management and would be charged with hiring and oversight of a project general manager. The board would also be responsible for coordinating all support services from other organizations, including NCDA&CS, NCSU, McDowell County Government and nonprofit organizations involved in agricultural development.

Should the development of this project move forward, research indicates that project leaders should pursue the following set of outcomes:

- A facility is established that allows producers to have small volumes of a variety of poultry and rabbit products of their own raising processed and inspected.
- Producers receive formal training for safe and wholesome commercial growing, processing and marketing of meat products that are state or federally inspected.
- Producers are able to understand and meet all regulatory issues affecting their businesses.
- Producers have a variety of options for marketing inspected meat, including direct marketing, wholesale distribution and participation in associations or other business entities for marketing and sales.
- Small-volume producers are able to expand production and professionalize their businesses.

Given that services provided should include the training and education of producers, this project should be developed as a public service effort.

A logical selection as lead fiscal agency for the project is the North Carolina Agricultural Foundation Inc., a 501(c)3 nonprofit organization with strong experience in grants management for agricultural development projects.

II. Next steps

Following publication of this report, project participants are encouraged to pursue the following action items:

- Secure full project support from McDowell County Government and the McDowell Economic Development Association, Inc. through a lease of the targeted project site to MEDA at a nominal annual lease.
- Support the full development of the WNC Small Animal Meat Processors Association as a recognized commodity group supporting the growth of independent poultry and rabbit-meat businesses.
- Develop an advisory board to oversee project development and implementation, with the goal of establishing an oversight board for project and facility management. Participant organizations should include NCDA&CS, NCSU College of Agriculture & Life Sciences, McDowell County and participant farm-based producers.

- Develop a legal subsidiary of MEDA to become the managing entity for the processing facility.
- Hire an individual as lead project developer with significant experience in grant writing and project development.
- Begin preparation of grant requests to support project management, site preparation, facility construction and equipment acquisition, with first-phase grant writing focused on compensation for a project developer and installation of sewer and water lines for the project site.

Endnotes

- ¹ National Farmers Market Directory. 2004. Agricultural Marketing Service, USDA.
- ² The number of farmers' markets is difficult to determine exactly because many are small and informal. This figure is based on markets listed in ASAP's regional *Local Food Guide*.
- ³ Results available from ASAP.
- ⁴ Western North Carolina is defined as the 23 counties included in the Advantage West economic development region of the state: Ashe, Alleghany, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga, Wilkes, Yancey.
- ⁵ Food Guide Pyramids Serving Data Set. Last Updated December, 2005. Economic Research Service, USDA.
- ⁶ "Broilers" are defined as chickens of meat-type strains raised specifically for meat production.
- ⁷ County Estimates, Broilers. 2003. Agricultural Statistics Division, North Carolina Department of Agriculture & Consumer Services.
- ⁸ Poultry Production and Value, Final Estimates 1998-2002. National Agricultural Statistic Service, USDA.
- ⁹ Full report available at <http://www.asapconnections.org/special/research/positioning.html>.
- ¹⁰ USDA Census of Agriculture. 2002. National Agricultural Statistics Service.
- ¹¹ "High interest" equals a rating of 7 or higher on a scale from 1 to 10.
- ¹² The *Local Food Guide* is a consumer-oriented publication which lists farms and organizations that serve or sell locally grown food in the region.
- ¹³ Information about market surveys at <http://www.asapconnections.org/special/research/index.html>.
- ¹⁴ These figures are derived using county-level data and state-level ratios for number and sales of eating and drinking establishments found on the 2002 US Economic Census. Cost of food is estimated at 33% of sales for the full-service category of restaurant (National Restaurant Association).
- ¹⁵ US Broiler Industry Structure. 2002. National Agricultural Statistic Service, USDA.
- ¹⁶ Price Premiums Hold on as US Organic Produce Market Expands. May 2005. Economic Research Service, USDA.
- ¹⁷ Zeuli and Cropp, *Cooperatives*, p. 31
- ¹⁸ N.C. Gen. Stat. § 54-132 (1935)
- ¹⁹ Zeuli and Cropp, p. 81
- ²⁰ See Keeling; Hariyoga & Sexton.
- ²¹ Keeling
- ²² Zeuli & Cropp, p. 83
- ²³ Hardesty & Salgia
- ²⁴ Revenue Ruling 74-147
- ²⁵ Revenue Ruling 74-587
- ²⁶ Revenue Ruling 76-419
- ²⁷ Revenue Ruling 76-419
- ²⁸ N.C. Gen. Stat. § 54-142.1
- ²⁹ N.C. Gen. Stat. § 160A-104 (cities and towns) and § 153A-4 (counties)
- ³⁰ N.C. Gen. Stat. § 158-7.1
- ³¹ See, *BellSouth Telecommunications, Inc. v. City of Laurinburg*, 168 N.C. App. 75, 80, 606 S.E.2d 721, 724 (2005).
- ³² N.C. Gen. Stat. § 66-58
- ³³ N.C. Gen. Stat. § 66-68(b)(1)
- ³⁴ N.C. Gen. Stat. § 66-59(b)(8)
- ³⁵ N.C. Gen. Stat. § 66-59(c)(3a)
- ³⁶ N.C. Gen. Stat. § 116-198.34(8b)

³⁷ N.C. Gen. Stat. § 158-8.1

³⁸ N.C. Gen. Stat. § 158-14

³⁹ Brown and Merrett, p. 4

⁴⁰ Dahl, 25 *Entrepreneurs Who Are Changing The World*.

⁴¹ Suddes, *Change the World of Not-For-Profit*.

⁴² *Triple bottom line*, WIKIPEDIA.

⁴³ *Farmer's Legal Guide*, pp. 93-94.

⁴⁴ 7. U.S.C. § 191

⁴⁵ 7. U.S.C. § 192

⁴⁶ 7. U.S.C. § 192(b)

⁴⁷ N.C. Gen. Stat. § 106-549.51(2)

⁴⁸ § 106-549.51A

⁴⁹ See Keeling; Hariyoga and Sexton.

⁵⁰ Hariyoga & Sexton.

⁵¹¹ Keeling

⁵² N.C. Gen. Stat. § 55A-60

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