

Study of Grass Fed Beef as a Value Chain in North Central New Mexico and the San Luis Valley



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EXECUTIVE SUMMARY

The Taos Community Foundation (TCF) is responding to a growing community desire to develop the local grass fed beef (GFB) sector in the region in response to both perceived market opportunity as well as a desire to create economic opportunity in the traditional ranching sector in Northern New Mexico that keeps families on the land. Consequently, the TCF has raised funds to undertake an objective and independent assessment of the opportunity, in order to provide a realistic and practical basis for investment in the sector.

The study was conducted by AISDevelopment, a Taos-based economic development consulting firm, employing Value Chain Analysis methodology. The methodology offers a straightforward and objective analytical tool for assessing key market actors, their roles and interrelationships, competitiveness and incentives *vis a vis* specific market opportunity, in this case, grass fed beef (GFB). A value chain is defined as “the full range of activities and services of market actors required to bring a product or service from its conception to its end use and beyond.”¹ The approach moves away from a singular focus on producers to a holistic understanding of the value chain in which they operate *vis a vis* their target market. The approach provides an understanding of the competitive requirements and “success factors” of the target markets and, based on that, evaluates the constraints and opportunities currently faced by value chain members in capturing it, resulting in a set of recommendations for actions that will position the region to create commercially viable opportunities.

KEY FINDINGS: The key finding of the value chain analysis is that the competitive constraints facing North Central New Mexico and the San Luis Valley (NCNM/SLV) will make it difficult for most ranchers in the region to produce a commercial grass fed/grass finished product that is a) competitive with current natural/grain finished and grass fed/grass finished beef suppliers in terms of quality and price, even in the local market, and that b) is profitable for producers. The main challenge is the cost of production and lower productivity due to the environmental context of the region. Current economic conditions affecting both consumer behavior and production costs, are not favorable to either of these factors.

STRATEGIC RECOMMENDATIONS: Based on the analysis, we conclude that there are three options for NCNM/SLV producers and stakeholders:

1. Small scale direct marketing, for producers who do not want to expand beyond 10-20 animals finished each fall
2. Participate as a supplier to existing value chains, such as Country Natural Beef

¹ *USAID Briefing Paper: The Value Chain Framework*. This Briefing Paper is based on: Olaf Kula, Jeanne Downing, and Michael Field, *Globalization and the Small Firm: A Value Chain Approach to Economic Growth and Poverty Reduction* (AMAP BDS Knowledge and Practice microREPORT #42, USAID/G/EGAT/MD. Washington, D.C.: ACDI/VOCA, 2006).
http://www.microlinks.org/ev_en.php?ID=21629_201&ID2=DO_TOPIC.

3. Find a buyer serving the local/regional market who will buy the whole carcass and work with a group of producers to develop a local (New Mexico) value chain

In order to implement the third option, we propose the following set of strategic recommendations:

1. Develop a “line” of natural products, with GFB that meets both the USDA and American Grassfed Association (AGA) standards as a super-premium product with the highest premiums. Along side the super premium product, develop other beef products that answer to other premium standards, and do the same with pork and poultry.
2. Establish standards for breeds and feed to improve productivity and ensure consistent quality in finished animals. Establish standards and third party verification for health (no anti-biotics, no hormones), environmental sustainability, and animal welfare (including handling, transport, and other “quality of life” issues).
3. Develop a New Mexico brand differentiated on the “story.”
4. Develop alliances with southern producers and producers in surrounding states to expand the supply base to include locales that can contribute to year around supply, and to improve economies of scale that allow for specialization—in finishing, processing, aging, and/or marketing—as business opportunities within the value chain.
5. Redefine “local”—Define the local market as at least a 4-hour drive time (300 mile radius) that would include Santa Fe and Albuquerque—markets that are critical to the sustainability of any value added agriculture product in the state—and still garner the “local premium.” Further position the New Mexico brand and product line for export from our immediate area.

PROPOSED INTERVENTIONS. The following interventions are proposed for public sector and donor consideration in order to facilitate private sector development of a specialty beef value chain in New Mexico:

1. Support NMSU Extension research on feed and breeds that are optimized for the New Mexico production context.
2. Implement a demonstration pilot to explore and adapt viable value chain model(s) through stakeholder collaboration, based on a key buyer serving the local market (defined as within New Mexico)
3. Facilitate value chain financing by establishing an Agriculture Competitiveness Incentive Fund (ACIF).

4. Continue value chain research into the feasibility of developing specialized private sector value chain services, including examining both national and international value chains.
5. Support creation of a third party verification program to establish minimum state standards for beef products, including health and nutrition, animal welfare, and environmental sustainability.
6. Develop an on-going market intelligence function to support the value chain.
7. Document the "story" of New Mexico ranching through "oral histories," in support of cultural preservation and brand development.

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ABOUT AISDEVELOPMENT

AISDevelopment (AISD) is a small, woman-owned HUB Zone* company specializing in economic development, market-oriented small and medium enterprise (SME) development, and sustainable agribusiness with a focus on rural poverty alleviation and market development. AISD services are aimed at linking communities to markets to create economic and social opportunity, by leveraging private sector business models that integrate community development, competitiveness and sustainable use of natural resources.

AISD principals have worked in 40 countries, on over \$700 million in projects, with over 50 years of combined experience. AISD's management team combines commercial, consulting, public sector, donor, and civil society experience that inform AISD's integrated approaches to economic growth and development. AISD offers its partners and clients the flexibility and low overhead of a small business along with the assurance of high performance standards. AISD is headquartered in Taos, New Mexico.

AISD provides integrated services in three core, interrelated practice areas:

- ***Economic Development.*** AISD provides services to local, regional and national governments, and international donor organizations in economic development strategic planning, design and implementation, including conducting feasibility and value chain studies, identifying and leveraging financing, creating public-private partnerships, and facilitating community and stakeholder participation, communications and coordination.
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Within these practice areas, AISD offers a range of cross cutting expertise that supports our integrated approach to economic growth and development:

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- Institutional Capacity Building
- Project Design, Monitoring and Evaluation
- Public Education
- Public-Private Alliances and Partnerships

* Historically underutilized business (SBA).

For more information, visit www.ais-development.com.



"We think it's terribly important that you meet the people responsible for the food you're eating tonight."

1 INTRODUCTION AND BACKGROUND

The Taos Community Foundation (TCF) is responding to a growing community desire to develop the local grass fed beef (GFB) sector in the region in response to both perceived market opportunity as well as a desire to create economic opportunity in the traditional ranching sector in Northern New Mexico that keeps families on the land. Local ranchers, with the assistance of outside investors, have made some efforts in this direction. Despite significant interest and funding over a period of several years, however, there is lack of understanding about what the actual market potential is, the nature of demand, and what needs to be done to capture it profitably. Yet, there is a general consensus that this *should* be an area where Northern New Mexico can be competitive.

Consequently, the TCF has raised funds to undertake an objective and independent assessment of the opportunity, in order to provide a realistic and practical basis for further investment in the sector.

For the purposes of the study, AISDevelopment (AISD) defines the production area as including Taos, Rio Arriba and Mora Counties in North Central New Mexico (NCNM) and the San Luis Valley in Colorado (SLV). For the report, we use the description North Central New Mexico/San Luis Valley, or NCNM/SLV. The market area that will be explored encompasses the communities located in the corridor from Taos to Santa Fe, as well as Albuquerque. For the purposes of the study, we use the term “Grass Fed Beef” or “GFB” to refer to beef *raised and finished on grass*.

The key challenge has been that in order to capture the market, ranchers incur significant costs—and risks—to finish cattle on grass, especially with such small volumes of product. To date, it is not clear that the premiums garnered for locally produced grass fed beef actually cover the additional costs of production incurred to finish on grass and direct market the product. Moreover, while grass fed beef is growing in popularity, it remains to be seen where the market will go, given the uncertainty of the definition of “grass fed” and its differentiation from natural or organic, and challenges meeting the demands of consumers for tenderness and taste with a grass finished product.

Experience to date has been characterized by a series of assumptions about the opportunity presented by grass fed beef. The primary assumption has been that, given demand trends in food in general and in beef in particular—food safety, health and nutrition, animal welfare, supporting family farms, environmental sustainability, local, etc.—NCNM/SLV is positioned to take advantage of growing market opportunity, based on the fact that cattle are, by default, grown in a manner that meets all these market preferences and because cattle are grass fed. The hope has been that grass fed beef would be the “silver bullet” that would revive the traditional ranching sector and allow ranchers to capture not only higher premiums, but more of the value of the final product.



Underneath this overarching assumption, are a series of related assumptions that have led ranchers and others to make decisions and investments that have not led to returns. Some of these assumptions include:

- Ranchers must retain ownership as long as possible in order to capture the highest percentage of the value of the final product
- Other members of the value chain—processors, marketers, input suppliers—“gouge” the ranchers
- Cooperatives do not work and are an inappropriate organizational form for Northern New Mexico ranches
- The only alternative to the commodity market is direct marketing
- Direct marketing is the only way to benefit from the “story”
- The local market is the easiest market for small local producers to capture
- Grass fed beef is a different industry from the commodity beef industry
- Social and cultural goals are more important than monetary goals
- A processing plant, preferably owned and operated by ranchers, is necessary to enhance opportunities for GFB and other local beef.
- A successful local beef program is based on the needs and goals of the ranchers

Underlying most of these assumptions is a frame of reference that focuses on production (supply). With this study we hope to change that frame of reference to focus on the market (demand) as the driver of decisions and investments—to promote a competitive supply response to demand—by replacing assumptions with facts in order to develop sustainable solutions that are economically, environmentally and socially feasible.

2 OBJECTIVES

The objective of the study is to identify the market for and determine the feasibility of developing grass fed beef in NCNM/SLV as a value-added product and to identify the requirements to develop the sector, including:

- Provide objective, *independent* assessment of potential for developing a local grass fed beef industry in NCNM/SLV
- Provide market information for private sector stakeholders to make strategic business decisions



- Provide guidance to public organizations regarding appropriate programmatic interventions that have the highest likelihood of having impact on the sector and local economy
- Provide a model for objective evaluation of local economic development opportunities
- Inform the ongoing state effort to develop the beef industry in New Mexico

3 METHODOLOGY

The methodology employed to conduct the study is referred to as Value Chain Analysis (VCA), a practical tool based on competitiveness theory developed by Michael Porter, and, in this case, adapted for application to industry/sector analysis versus firm analysis.³ We chose this methodology because it is a straightforward and objective analytical tool for assessing key market actors, their roles and interrelationships, competitiveness and incentives *vis a vis* specific market opportunity. The methodology has been implemented world wide to analyze a variety of market opportunities and is based on the following assumptions, which have been documented based on on-the-ground experience:

- Increased knowledge of end markets drives change
- Industry-level competitiveness is as important as firm-level competitiveness
- Incentives for upgrading are offered by better knowledge of markets and by scale and reduced risk achieved through value chain collaboration
- Ongoing learning is necessary for keeping up with consumer demand and preferences
- Firms learn primarily from their buyers
- Willingness to collaborate among competitors increases the benefit to all value chain stakeholders

A value chain is defined as “the full range of activities and services of market actors required to bring a product or service from its conception to its end use and beyond.”⁴ Market actors in the value chain can include producers, processors, input suppliers, exporters, retailers, etc., as well as supporting services such as finance, legal services, R&D, specialized technical services, or information and communications technologies. The approach moves away from a singular focus on producers to a holistic

³ See Institute for Strategy and Competitiveness, <http://www.isc.hbs.edu/>

⁴ *USAID Briefing Paper: The Value Chain Framework*. This Briefing Paper is based on: Olga Kula, Jeanne Downing, and Michael Field, *Globalization and the Small Firm: A Value Chain Approach to Economic Growth and Poverty Reduction* (AMAP BDS Knowledge and Practice microREPORT #42, USAID/G/EGAT/MD. Washington, D.C.: ACDI/VOCA, 2006). http://www.microlinks.org/ev_en.php?ID=21629_201&ID2=DO_TOPIC.



understanding of the value chain in which they operate *vis a vis* their target market. The approach provides an understanding of the competitive requirements and “success factors” of the target markets and, based on that, evaluates the constraints and opportunities currently faced by value chain members in capturing it, resulting in a set of recommendations for actions that will position NCNM/SLV to create commercially viable opportunities for the region.

The value chain approach is fundamentally about building connections and relationships among firms and institutions that have traditionally acted in isolation.⁵ Key elements of the approach, depicted in Figure 1 below, include:

End markets. The preferences and buying habits of final consumers determine price, quality, quantity, and timing of successful product or service. This information helps us understand how to leverage the market to make traditional agriculture economically sustainable.

Business and enabling environment: Regulations, policies, laws, infrastructure, etc., at all levels of government can inhibit or enhance value chain functionality, by increasing transaction costs or providing incentives that bring in investment.

Vertical linkages: More efficient transactions among input suppliers, producers, processors and buyers increases competitiveness and provides a channel for learning and innovation. Knowledge of and relationships with other members of the value chain provides small and medium enterprises with access to markets, information, skills and assistance, and reduces risk by ensuring long term relationships and future sales.

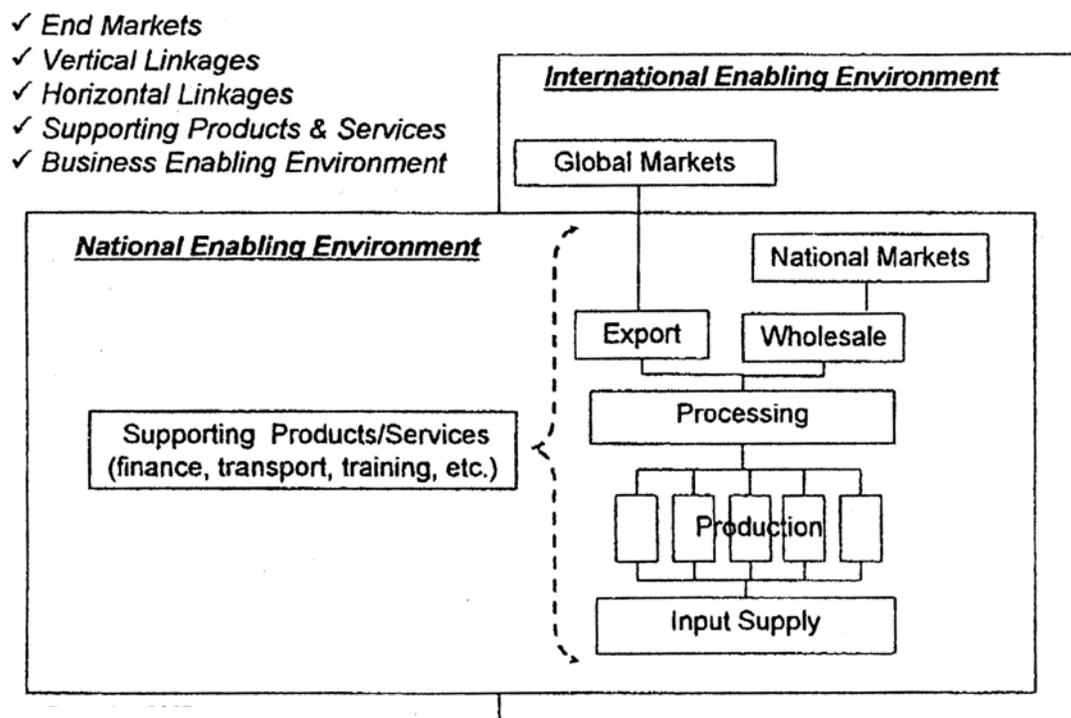
Horizontal linkages: Collaboration among firms that provide similar products or services, generally in competition with each other, allows small and medium enterprises to have more impact on the value chain by, for example, reducing costs through bulk purchasing and economies of scale; joint advocacy; innovation; and implementing joint marketing strategies. The economy of NCNM/SLV is characterized by farms and firms that are too small to do these things on their own or lack enough power in the value chain to have an impact by their own individual actions.

Supporting markets: Financial services, business consulting, legal advice, telecommunications, transportation, or sector-specific services (such as veterinarians), are key to firm level and value chain upgrading to capture new markets. Often these services are provided by actors within the chain (e.g., the cost is embedded in the transaction) or by stand alone providers.

FIGURE 1: Value Chain Framework

⁵ *Promoting Competitiveness in Practice: An Assessment of Cluster-Based Approaches* (The Mitchell Group, November 13, 2003) <http://www.bdsknowledge.org/dyn/bds/docs/254/USAID-Mitchell-Clusters.pdf>





Key Players. A critical aspect of the approach is identifying existing “key players” in the value chain, who can serve as leverage points for achieving change. By empowering these players, it is possible to upgrade the value chain as a whole, benefitting producers, processors and others with a stake in the success of the value chain. Often a key player is a firm or individual that has relative power to set terms and conditions of transactions, frequently a player that serves a value chain integration role. Understanding where the key players reside is important for determining where and how to intervene to upgrade the value chain. For example, providing technical support to a market-based entity that can provide the specialized services that ranchers and other value chain stakeholders need, has an impact on the competitiveness of the entire value chain.

Commercially viable solutions. To be sustainable, solutions must be market based. Publically funded efforts should focus on facilitation of market-based solutions implemented by private value chain stakeholders.

The value chain analysis methodology was chosen because it offers a valuable model for objective evaluation of local economic development opportunities, and is practical and replicable to other sectors and opportunities. Advantages of the approach include:

- Strengthens competitiveness of the entire industry, rather than just one segment (e.g., production) or firm, by addressing constraints that benefit the entire value chain



- Increases the potential for small and medium size enterprises in all segments of the value chain to capture higher value markets
- Promotes coordination and information sharing that fosters innovation along the value chain as each member understands their role in the context of the entire value chain and *vis a vis* market requirements.
- Focuses investment on addressing constraints to competitiveness of entire value chain
- Focuses on the specific needs of value chain stakeholders, rather than providing a one-size-fits-all economic development solution, and promotes specialization by business service providers.

The following sections of the report present the results of the study based on the approach outlined above. The first section provides an overview of the broader beef market internationally, nationally and in New Mexico, and trends within the industry. Following that, we examine the experience of natural and grass fed beef initiatives from other regions and derive lessons learned, identifying successful value chain models that might inform an approach in NCNM/SLV. Then we conduct an analysis of the local market for grass fed beef at the consumer and institutional buyer levels, and identify existing competition from current suppliers.

Based on the market analysis, we assess the existing grass fed beef value chain in NCNM/SLV in terms of its ability to capture identified markets, mapping the primary market actors and their interrelationships and identifying “key players” who might serve as catalysts for upgrading the value chain. We then examine key constraints and opportunities for capturing the identified market opportunity, including technology/product development, market access, input supply, organization and management, finance and policy.

The report concludes by identifying the elements of a strategy for developing commercially viable models that address the most critical constraints within the value chain, and secondarily, on recommendations for donor funded interventions to facilitate market based solutions. The aim is to identify the most critical leverage points where solutions and interventions will have the greatest impact on the value chain.

4 STATE OF THE BEEF INDUSTRY

4.1 National and State Industry Overview

New Mexico State University recently completed a study entitled “Adding Value to the New Mexico Beef Industry,”⁶ in which they provided an overview of the state of the national and state beef industries. Some of the key highlights of the report include:

⁶ Dr. Terry Crawford, Ph.D., Dr. Jerry M. Hawkes, Ph.D., and Ryan D. McConnaughey, *Adding Value to the New Mexico Beef Industry*, Draft Report (New Mexico State University, July 2008).



- The beef industry is characterized by a large number of small producers. Over 75% of all cattle operations have less than 49 head and hold 27.6% of inventory, while operations with over 500 head represent 0.72% of operations and hold 15.1% of inventory.
- Costs of production have increased nationally. Nationally, the costs of commodity cow/calf operations rose over 10% from 2005 to 2006 due to the rise in feed prices, which have risen even more in the last year. The impact of rising costs of production is a reduction in the margins earned per bred cow from \$108.71 to just \$27.15 in 2006, a value that is probably even lower today due to rapidly rising oil prices. In New Mexico, the value of production less operating costs was \$274.10 in 2007.
- Per capital beef consumption nationally has declined substantially, and while prices have also fallen significantly, beef remains more expensive than pork or poultry. Consumption of poultry from 1980 to 2007 rose 67% while consumption of beef during the same period fell by 15%.
- Consolidation of the meat packing industry makes it difficult for small packers to survive. According to Research-Education-Advocacy-People (REAP), "In 2006, there were 807 beef slaughter and processing plants, of this number, just 13 slaughtered and processed 60 percent of the nation's cattle."⁷ With more and more of the sales and production concentrated in fewer companies, it is harder for smaller plants to compete and many have closed. Regardless of this trend, the economies of scale needed to ensure an economically viable packing facility are prohibitive for New Mexico, particularly without significant feedlot capacity.

The New Mexico beef industry is the second largest contributor to the value of New Mexico commodities after the dairy industry. About 2,600 ranchers raise 460,000 beef cattle, primarily cow/calf operations. New Mexico's feedlot capacity is about 100,000 head.

4.2 Regional Context

According to the 2002 Agriculture Census (Annex A), there were 412 ranches in Mora County, 268 in Rio Arriba, and 201 in Taos. When broken down by herd size, the majority of ranches had less than 50 head: about 76% of ranches in Mora and Rio Arriba, and 89% of ranches in Taos had less than 50 head, compared to 75% nationally with less than 50 head. Taos had the highest percentage of ranches with less than 10 head per ranch (35%); 22% and 24% of ranches in Rio Arriba and Mora, respectively, had less than 10 head per ranch.

According to the Basic Inventory of cattle from 1975 to 2008 (Annex B), there are an estimated 12,000 head of cattle in Rio Arriba and 2000 in Taos in 2008, compared to 460,000 in the state of New Mexico, representing about 3% of total state production. Since 1975, when data were first collected, the number of head of cattle in the state of

⁷ http://www.reapinc.org/ProfileIntro_Meat.html



New Mexico has decline by 36%, while in Rio Arriba the number of head has declined by 37% and in Taos by 59%.

Based on the 2002 data from the Agriculture Census and the Basic Inventory, the average number of head per ranch in Rio Arriba was about 36 (15,000 head on 412 ranches) and in Taos about 20 (4,000 head on 201 ranches). The sector is dominated by cow/calf operations; the average size of cow/calf operations in New Mexico state as a whole is 40-50 head, compared to 30 nationwide.⁸

In San Luis Valley (SLV) as a whole (all six counties), the 2007 livestock inventory reported 75,000 head of cattle, of which 45,000 are beef cows and heifers that have calved.⁹ Of the beef cow/heifers, the largest number are in Conejos County (16,000, about 35% of the total), with 11,000 in Saguache, 9,000 in Rio Grande, 5000 in Alamosa, and 4,000 in Costilla.

Another interesting statistic from the SLV data was the average age of farm/ranch operators, which ranged from 52 to 65, depending on the county, with an average age of 55 in all counties.¹⁰

4.2 Trends

Major trends occurring in the broader economy or within the industry will have an affect, both positive and negative, on prospects for GFB. Though not a focus of this report, they should be taken into account in developing a value chain model:

Rising cost of fuel. Rising fuel prices are creating a variety of consequences for the beef industry on both the market and the production sides. On the market side, in efforts to reduce transportation costs major buyers are seeking to capitalize on the growing desire by consumers to buy local product, by increasing local sourcing. Walmart, for example, recently announced a major new policy to buy more of its produce for its supercenters locally. This may or may not offer opportunity to small local farmers, since Walmart buys in large volumes. But, in general, this trend should offer more opportunity to local producers and opens a window of opportunity for re-orienting value chains to better incorporate rather than displacing local producers.

On the production side, there are both positive and negative consequences. High fuel prices are pushing up the price of corn making commodity beef more expensive to produce. This has focused more attention on GFB and other alternative production practices, and commodity beef producers are exploring these to reduce reliance on corn. Even natural beef producers are affected, since they rely on some corn or grain inputs to finish cattle. At the same time, there is only so much grazing land and only so much grass available in an environment like NCNM/SLV and the single biggest cost item

⁸ New Mexico Beef Council, <http://www.nmbeef.com/CMDocs/NewMexico/NM%2006%20AR%20NEWSLETTER%20R3.pdfv>

⁹ *2007 Comprehensive Economic Development Strategy*, San Luis Valley Development Resources Group, www.slvdrg.org

¹⁰ *Ibid.* p. L-12.



for GFB producers in the region is supplemental hay for feeding in the winter. The cost of producing hay is increasing because diesel is a key input for growing, harvesting and baling hay.¹¹

Rising cost of food. Related to the rise in fuel costs, the rise in food prices is also affecting consumer behavior as reflected in stock market trends. Wholefoods' stock price has fallen almost 60% in the last year, partly due to economic conditions which are causing some consumers to buy more of their food at lower cost outlets, especially Walmart and CostCo. This trend is affecting most major supermarket chains, as well as Wholefoods.¹²

Conventional beef industry consolidation. Brazilian firm JBS S.A.'s acquisition of the third and fourth largest US beef processing companies and the largest US feeding operation, has created concerns that further consolidation of the US beef industry will reduce opportunities for small ranchers. Many anticipate that commodity prices will fall and that even niche market prices may be affected. Others argue, however, that JBS's international market network will actually open up new markets for US beef exports, creating new opportunity for US beef producers, and that its investment in processing is a boost to the flagging processing sector, which as seen a number of closures due to current economic conditions.

Animal welfare. Part of a growing trend among consumers to know where their food is coming from is the concern for how animals are treated, both from an animal welfare perspective but also because of the impact of production practices on food quality and safety. Recent events at a California beef processing plant have reinforced this growing concern. There is an opportunity for GFB producers to position GFB production practices as the *best* from an animal welfare perspective.

Climate change. The impacts of climate change on New Mexico's water resources was evaluated in a recent joint NMSU-UNM report by Brian Hurd and Julie Coonrod.¹³ One of the alarming results of the analysis is that agriculture productivity in the Rio Grande watershed, which includes areas in Colorado and Texas, as well as New Mexico, represents less than 0.8% of New Mexico's GDP, but uses more than 87% of the water in the watershed.¹⁴ The study looks at six climate change scenarios, and in each case, agriculture is substantially affected by decreased water availability—either due

¹¹ Joshua Wilson and Dawn Thilmany, *Enterprise Budgeting: An Application to San Luis Valley Grass-Fed Cattle Operations* (Department of Agriculture and Resource Economics in Fort Collins, February, 2005). This study, indicates that ranchers who produce their own hay rather than buying it may actually have higher feed costs, even before fuel prices began to rise, because of the cost of equipment and fuel.

<http://dare.agsci.colostate.edu/csuagecon/extension/documents/PFM-05-01.pdf>

¹² Craig Johnson, a retail consultant, as quoted by AP on May 14, 2008

http://biz.yahoo.com/ap/080514/whole_foods_stock.html

¹³ Brian Hurd and Julie Coonrod, *Climate Change and its Implications for New Mexico's Water Resources and Economic Opportunities* (NMSU Department of Agricultural Economics & Agricultural Business and UNM Department of Civil Engineering, July 2007).

http://www.iowabeefcenter.org/content/Organic_Natural_Grass_Fed_Beef_2006.pdf

¹⁴ Ibid, page 14.



to fewer water resources or more competition for those diminishing resources by growing population or to higher productivity uses that makes use of the resource more efficiently. The direct impact of climate change will be reduction of forage production on range lands, which will directly affect livestock productivity.

Growth in the Hispanic consumer market. The number of Hispanics/Latinos in the US grew by 58% from 1990 to 2000, and by a further 23% from 2000 to 2006, representing 14.7% of the total US population. It is the fastest growing market demographic in the United States. According to the University of Georgia's Selig Center for Economic Growth, purchasing power of Hispanics/Latinos increased by more than 63% from 2000 to 2006 and is expected to continue to grow at a rapid clip. According to the U.S. Census Bureau's American Community Survey (2006), median household income among Hispanics/Latinos grew by 8.7%, higher than the overall rate of growth in the United States of 6.9%. This demographic represents an untapped opportunity for New Mexico products in general, but especially in beef. While we did not find data to indicate whether overall beef consumption among this demographic is rising or falling, according to the website www.beefretail.org Hispanics/Latinos "spend 42% more on beef than other ethnic groups" and "eat beef 4-5 times per week, versus an average of 2 to 3 times per week for the general population."¹⁵ Capturing this market entails developing product lines tailored to the Hispanic preferences for cuts of meat (such as thin, flat cuts from chuck or round, shredded beef, and ground beef).¹⁶

5 EXISTING NON-COMMODITY VALUE CHAIN MODELS

This section reviews experience to date in natural and grass fed beef by looking at existing value chain structures that have been fashioned to supply the growing market. We identified six different approaches to production and marketing of natural and grass fed beef, each a different structure driven by a different key player in the value chain that provides value chain "integration" services. Note that some companies were more forthcoming than others, so the level of detail for each varies. Also, we did not have access to financial performance information to evaluate the profitability of these companies, but most have significant market recognition, market presence or scale in the market. Value chain maps of each of these models is provided in Annex C.

5.1 Overview of Existing Value Chain Models

Artisanal Producer. The "artisanal" approach entails individual ranchers producing and finishing their own cattle and doing their own direct marketing to their neighbors, a local customer network, Farmers' Markets, local farm stores, Community Supported Agriculture (CSAs) and/or local restaurants. The most common approach is for the rancher to sell the whole animal "on the hoof" to customers in advance, and then have the animal slaughtered, custom cut and delivered to the customer in coolers or a refrigerated truck (additional fees are charged for these services or are built into the

¹⁵ <http://www.beefretail.org/markMerchandisingtotheHispanicCustomer.aspx>



per pound price). This approach requires building a loyal customer base with enough upfront money to buy the whole animal and the freezer space to store it, and works best when the ranch is near its customers.

Many ranchers also sell halves and quarters. Although some sell smaller cuts, usually the high end cuts (to restaurants for example), they face higher marketing costs because of the need to find customers for the remaining often less desired cuts. To address this, one rancher we talked with has developed “family packs” containing a variety of high and low end cuts offered at a single price per pound, to increase the chances of selling the entire yield. More often than not, however, many end up selling the remainder as ground beef and/or frozen, at a lower price. This is the single biggest challenge facing the artisanal producer: the constant need to juggle what is produced with what can be sold and still earn a margin. Other challenges include compliance with health regulations for selling at farmers’ markets, and high shipping costs for out of state sales (e.g., through the Internet), which are often as high as the cost of the product itself.

The most well-known example of the “artisanal” model is Polyface Farms, owned by Joel Salatin, in Virginia, made famous by Michael Pollen in his best-seller *The Omnivore’s Dilemma*. Polyface sells to local and regional Virginia restaurants and through a regional buyers club. Polyface produces and sells a line of natural meat products, not just beef. Polyface serves a local area within a 4 hour drive of the farm—which includes the major market of Washington DC, a primary local market for Polyface—with a converted bus carrying 150 coolers with ice packs. Polyface, however, is now moving into a Core Producer model, discussed below, in a partnership with Chipotle to supply pork to a local outlet.

In general, this model is appropriate for small-scale producers or slightly larger operations selling most of their cattle through the conventional market that want to supplement their income with some premium sales. This model is the commonly found in the NCNM/SLV study area. Anecdotally, there seems to be some consensus that this model can generate good margins for the producer, even given higher costs of finishing, marketing and transportation/shipping, but only up to about 15-20 head. There is no data or analysis available to support this statement, just the anecdotal experience of ranchers who have tried and find the marketing hard to manage beyond that scale.

We also identified an unsuccessful example of a small local grass fed beef operation trying to scale up to a commercial level direct marketing to the local market. The experience of a Texas company that attempted to do so is informative. They approached a wide range of small local buyers, including restaurants, health stores, farmers markets, etc. and generated a large number of small highly customized orders. It took 2-3 years before they felt they had figured out the mix they needed to meet the highly customized and specific low volume orders of a large mix of local customers, and still sell the whole animal. After five years, however, they found that they could not make a margin with this approach and closed down the company. They estimated that in order to be able to consistently respond to the precise mix of products ordered, while closely controlling costs, required a volume of about 500 animals per year, a number that was simply not sustainable at their scale. The experience led them to



develop a marketing approach based on selling entire animal carcasses to a single large buyer.

Core Producer. The Core Producer model involves a major farm that has direct relationships with buyers or distributors, and that works with a network of small farms to supplement supply to fill orders. The Core Producer markets under its own brand name and due to its supplier network has the ability to supply high volumes. The most successful example of this model is **Niman Ranch** (www.nimanranch.com, a natural beef supplier that finishes on grain). Niman started as a fully vertically integrated operation, but is now a cooperative with 600 members in 11 states. Niman Ranch owns a “finishing lot”¹⁷ where they finish 3000 head themselves, and supplement their supply through a network of small family farms that raise the cattle to about 900 pounds in 14 to 18 months, and then finish the cattle according the specifications established by Niman at pre-approved finishing lots. Niman defines a family farm as “farms on which an individual or family owns the animals, depends on the farm for livelihood and provides the majority of the daily labor necessary for the farm’s management and upkeep.” Niman promotes the story of their partner farmers.

Niman requires that all participating animals must be predominantly Angus-based British breeds. Niman buys the finished cattle live from its suppliers, testing each animal to ensure that their standards are met. The supplier farms are scattered all over the US, and supply small volumes at different times of year, depending on their capacity and environmental constraints (some do not supply year around). Niman sends its own inspectors to audit ranch compliance with Niman standards and protocols. Niman takes ownership of all the cattle and has them processed in an independent plant in Utah or at an approved facility that meets Niman’s standards for food safety and animal welfare, and that have the capability to segregate Niman cattle. Niman dry ages only certain cuts that have sufficient marbling and fat layering (Ribeye, New York, roasts) for a minimum of 21 days at its own meat cutting facility. Niman sells directly to hundreds of restaurants in California and nationwide, as well as through distributors. They are a major supplier to Chipotle, adding a new farm every time Chipotle opens a new restaurant. Their products are available in Taos at several restaurants.

Another example of a Core Producer is **Tallgrass Beef Company** (www.tallgrassbeef.com, as distinct from the Tallgrass Prairie Producers cooperative). Kansas Tallgrass Beef Company is based on an 8,000 acre ranch producing grass fed beef and selling primarily to restaurants, delivering nationwide through a distributor. Tallgrass cattle are raised and finished in the Rocky Mountain region, in the Midwest, Georgia and Florida, by partner ranches who must meet the Tallgrass “protocol,” which defines standards for breeding, feed, animal welfare, safety and quality. Tallgrass animals must be a maximum of 30 months of age with a carcass weight between 500-900 lbs. Tallgrass pays \$1.75 per pound of hot carcass weight for cattle that meet or exceed the minimum Tallgrass Beef™ specifications, including ultrasound qualifications prior to being delivered to the plant for harvest.¹⁸ Tallgrass beef is processed in

¹⁷ Niman states that these are not industrial feedlots and that their standards ensure that animals are safe and healthy and allowed to roam naturally.

¹⁸ <http://www.tallgrassbeef.com/media/pdfs/protocols.pdf>



independent plants in Kansas, Nebraska and Georgia. To support year around supply, Tallgrass relies on cattle from states like Georgia or Florida, where grass is readily available in the winter. Tallgrass cuts their beef after a 72 hour chill in the holding cooler, after which it is cryovac'd and wet aged for approximately 14-21 days. Tallgrass says that they do not do extended aging because they rely on genetic selection and other production practices to achieve tenderness and quality.

As mentioned above, *Polyface Farms* (www.polyfacefarms.com) is scaling up to a Core Producer model based on its partnership with Chipotle. Last year, Chipotle started sourcing pork from Polyface farms for one of their local outlets in Charlottesville, VA, putting signs in the window on the days that the local pork was available, gradually scaling up to offering local pork every day of the month in this one store. Chipotle is known for its commitment to serving only naturally raised meat, but is now trying to tackle the challenge of also serving local product. According to a Washington Post story in March of this year, it took 17 months to accomplish this, including "buying extra cooking equipment, developing new recipes, adjusting work schedules and investing in temperature-monitoring technology for Polyface's delivery van." The experiment entailed a large investment of time and resources by Chipotle to figure out how to make it work to source locally from a small family farm. Chipotle originally wanted to source natural chicken, but Polyface could not supply the volume needed, and convinced Chipotle to buy the pork cuts they had trouble selling, for use in burritos.

The key challenge Chipotle faced was how to keep the local product separate from product sourced elsewhere. Normally all product goes to a central kitchen in Manassas, VA for cooking. To keep the product separate, Chipotle had to install an oven on the local Charlottesville restaurant. The second challenge was to develop new recipes for the leaner local meat product that would match the taste expectations of customers. The third challenge was scaling up to the volume and food safety standards required by Chipotle. In order to scale up, Polyface is planning to provide technical assistance to other local small farms to link them into the value chain, developing, in effect, a Core Producer or possibly a Marketing Cooperative model (discussed below). Polyface could not afford to buy a refrigerated truck required to meet food safety standards, so Chipotle came up with the solution of using temperature monitors in the coolers to ensure the product was maintained within food safety standards. Chipotle assisted Polyface with all these issues including delivery and custom cutting to their specifications.

Marketing Cooperative. The Marketing Cooperative model involves a group of producers joining together to jointly market their product based on a common brand and set of standards. An example of a successful beef marketing cooperative is *Country Natural Beef (CNB)*, (www.oregoncountrybeef.com), comprising 100 family-owned ranches from around the country, including Oregon, Washington, California, Nevada, Idaho, Wyoming, New Mexico (6 members), Colorado, Texas and Hawaii. CNB markets natural grain finished beef to retailers, and the member family ranches own, control and finance their beef from birth of the calf to the retail customer. Members are paid directly by the retailer. To ensure consistent quality, however, cattle all go through one of two independent finishing lots in Hereford, TX or Boardman, OR (the producer pays the cost) where they are finished on the same diet (including grain).



Producers are responsible for feeding their cattle in the finishing lot. From the finishing lot, CNB contracts with private trucking companies, who are trained in humane handling practices, to truck the cattle to a processing plant, AB Foods, based in Washington state. The processor cuts the carcasses into primals and cryovac's them. CNB does not age its product; its customers do their own aging and cutting. CNB retains ownership and management of the boxed product to the retail cooler.

CNB sells their product first, then plans production in conjunction with its members twice a year. Based on a buy plan, a weekly delivery schedule is arranged whereby each producer knows when they are to deliver a truckload to the finishing lot. A truckload consists of a minimum of 60 head; if a producer does not have the quantity to fill the order by themselves, they partner with other members to complete the order. New members must pass an inspection by the Food Alliance (www.foodalliance.org) upon joining, then every 3 years. CNB does its own distribution to 76 restaurants and 112 stores nation wide, including in New Mexico through Whole Foods in Santa Fe and Albuquerque. CNB sells about 45,000 head per year. CNB told us that they have not marketed GFB because they have not figured out how to produce it profitably year around.

Panorama Grass-Fed Meats (www.panoramameats.com), a program of the Western Ranchers' Beef Cooperative, offers another model of a Marketing Cooperative. Their grass fed product complies with strict standards for forage, with no grain products in the diet. Participating ranchers raise the cattle according to a strict protocol for feed, seed, handling, certifications and traceability, including no hormones or anti-biotics used. To be accepted into the program, cattle must have reached a minimum weight of 1100 pound by 14 to 18 months of age. Cattle are then consolidated in finishing pastures, or "conditioning facilities," for 30 to 60 days and fed a finishing diet of grass hay and alfalfa with "added forage based proteins and fibers."¹⁹ Ranchers retain ownership through slaughter and the carcass is sold based on hot weight. The price per pound of hot carcass weight that is offered to producers is adjusted based on time of year and yield, but Panorama has established a fixed average yield of 55% to incentivized producers to achieve this standard through genetic selection. Producers pay the costs of feed to the conditioning facility, and are responsible for trucking and processing costs through deductions from their proceeds, paid within 60 days of slaughter. Panorama ranchers are located in California, Washington, Nevada and Oregon.

An example of an unsuccessful marketing cooperative is ***Tallgrass Prairie Producers*** in Kansas, a member-owned cooperative formed in 1995 by 10 Kansas producers. They were touted as a successful model of grass fed niche marketing despite the fact that their operation consistently lost money and dissolved after five years in spite of strong producer commitment. They sold their product in 23 states through large natural foods distributors. They found, however, that even customers at natural foods stores had a very limited understanding of the benefits of grass-finishing, which was the basis of differentiation from other meat products, and were still very price conscious. Without large volumes they could not reach an economy of scale large enough for cost-

¹⁹ http://www.panoramameats.com/resources/Panorama_ProductionProtocol.pdf



effective processing and transportation. Their marketing model required year-round supply, which increased cost of production. They suggest that the co-op model could work, but they needed to operate at a larger scale, capture volume markets, control costs, have professional management and marketing expertise, and sufficient upfront private capital. The coop disbanded in 2000.

In an article entitled "Romance vs Reality: Hard Lessons Learned in a Grass-fed Beef Marketing Cooperative,"²⁰ Anne Wilson, member and former business manager of the cooperative, highlights a number of lessons learned from the experience:

- Producers must account for time spent on marketing and business activities. "Working free or failing to account for every bit of time leads to unrealistic, unsustainable business practices that are too labor-intensive and inefficient."
- Reliance on grant funding can be detrimental to developing a solid business model. "...some grants also are time-consuming and may unintentionally divert away from business development, subverting the business mission from profit to education. They also can mask a real need for hard capital and a solid business plan."
- Year around supply increases costs substantially. "In attempting to keep up our supply for existing customers, our on-ranch costs for producing off-season grass fed beef were extremely expensive and unprofitable for producers..."

Lastly, the article highlighted the following critical lesson learned, "... our little struggling cooperative was touted as an inspiration and example to others. We know of many other similar operations that are not yet profitable but are nonetheless presented as successful models in marketing. This misrepresentation is unrealistic and possibly harmful, as it adds to deceptive and misleading myths contributing to the "local niche marketing as salvation for all farmers" movement. This may influence other producers to enter into similar projects at great personal risk. Producers who hear about these projects need to be extremely skeptical and find out the details before accepting the stories at face value."²¹

Independent Marketer. In this model, the marketing entity is not necessarily producing product, though may be. Similar to the Core Producer model, the marketing entity has direct relationships with retailers based on negotiated "buy plans," and serves as the conduit for marketing and sales for a network of small ranchers. The marketer negotiates a supply contract with the buyer and sources from a network of independent suppliers to supply product based on a set of standards and specifications established by the buyer and verified by the marketer. This model depends on the marketers having strong knowledge of and relationships with the buyers and knowing the producers.

A successful example of this model is ***American Livestock Group (ALG)*** in Texas, which is supplying local stores of a major health food supermarket chain with grass fed beef from local ranchers. This model centers around a private grass fed beef marketing

²⁰ Anne Wilson *Romance Vs. Reality: Hard Lessons Learned in a Grassfed Beef Marketing* (Kansas Rural Center Cooperative Rural Papers October 2001).

²¹<http://www.agmrc.org/agmrc/business/strategyandanalysis/romancevsreality.htm>



company that plays the key value chain integration role as marketer for a group of GFB producers. The company negotiated a relationship with the supermarket chain to exclusively supply all locally sourced GFB, then identified ranchers already growing grass fed beef, but who were only selling direct to individuals, to supply the product. The company educates the producers on buyer standards and oversees quality and compliance at the ranches. All participating producers must be an approved vendor to the buyer. The producers deliver the animals to the slaughterhouse, where they are slaughtered and hung for aging. The buyer pays the cost of processing (either directly or through the marketing company). The processor has a refrigerated truck and delivers whole carcasses to a loading dock where the buyer's truck picks up the carcasses and distributes them to the participating stores in its network.

To start with, the company sells 3 full carcasses per week to one local store, based on a supply of about 50 animals. The buyer cuts the carcasses to their own specifications and places them in the fresh meat section. The product bears a USDA approved label stating "local grass fed" and promotes the story of the producers. Based on success of the first phase, they are planning to begin selling 12 full carcasses per week to 4-5 regional stores, and working in partnership with the buyer to develop a viable scaling up plan. As they scale up, they will need to address other issues, such as:

1. Formalization of a producers group so that it is producer owned.
2. Defining chain of ownership along the value chain
3. Establishing standard carcass weights
4. Transportation for a larger number of animals (to get the animals to the processor)
5. Annual third party audits to verify compliance with production standards
6. Distribution for higher volumes, probably through the buyer's established distribution system
7. Expanding the network of producers, including converting conventional and natural producers to produce for the GFB market. This involves providing technical assistance to help producers finish on grass, or providing finishing services by other producers.

It is interesting to note that most of the supplier producers participating in the program continue to sell direct to their existing customer base, where margins are still relatively high at low volumes (in their estimation, around 10 animals). None are selling to the commodity market. This model is being implemented and tested in a variety of state and city markets through an alliance of producers, including in Georgia, Missouri, Boston, Chicago and Denver.

Vertically Integrated Producer. *Harris Ranch* (www.harrisranchbeef.com), based in California, another successful producer and marketer of natural beef finished on grain, is fully vertically integrated, including raising, finishing, processing and marketing its beef, procuring cattle that meet specific genetic requirements for their program from a network of regional producers. Harris Ranch markets under its own brand and uses distributors to deliver nationwide to stores and restaurants. Harris Ranch products are found in stores in Santa Fe, as well as several restaurants in Taos. The approach requires a substantial amount of capital. Harris Ranch sells about 200,000 head a year.



Maverick Ranch Natural Meats, based in Colorado, is another example of a vertically integrated producer marketing under its own brand. The original family owned ranch, Rocking M Ranch, started as a seedstock operation specializing in the Salers breed and won frequent awards for carcass quality. Once the family was exposed to natural meats, they found that the quality of their meats was competitive in this market and they formed an association with 97 other family owned ranches to supply natural beef to stores. This effort closed due to losses, and the family restructured the business around a fully vertically integrated group of companies owned by the family, including the ranch and specialized firms in testing, processing, and marketing and graphic design, while expanding into natural poultry and eggs. Maverick continues to source supply from family ranches that meet the genetic requirements for Maverick's product. Maverick sells about 90,000 head a year and their products are available in over 2000 grocery stores.

Processor. Under this model, the processor plays the key brokering role in the value chain, taking ownership of the product from producers after finishing, and marketing under its own brand name. In this case, the processor, or the company owning the processing plant, has the direct relationship with buyers. A successful example of this approach is ***Anzco Foods***, a multinational New Zealand based company with majority Japanese ownership producing beef and lamb products. Its beef products represent 20% of New Zealand's beef exports, and the US represents 60% of total beef exports from New Zealand. The company owns a feedlot and five processing plants, which procure cattle from local producers under a audited preferred provider program, then slaughter and process beef products, and market them through overseas offices, including one in the US. New Zealand's climate allows year around production of grass fed beef and "continuous outdoor rearing." The product is wet aged during the transshipment from New Zealand to the US. Anzco processes about 400,000 grass fed animals a year.

5.2 Findings and Conclusions

What conclusions can we derive from these models that are applicable to NCNM/SLV?

- Standards for breeds and feed. All the key players in each variation of the value chain establish and enforce a "protocol" that includes strict standards and guidelines for breeds and feed to ensure consistent product quality.
- Buyers as key players. Buyers who have the commitment and ability to work with producers to find solutions to local supply outside the standard distribution systems are critical to success in organizing value chains to serve local markets.
- Volume is addressed through consolidation of supply from a large number of small producers. At some point in the value chain—production, finishing, processing, or marketing—supply is consolidated to address volume and quality control issues.
- Diversification. Most, but not all, market a product line that includes other meat products (e.g., pork and poultry) and other production practices (e.g., organic), rather than relying upon one product or production practice.



- Geographic distribution of the value chain. The value chain, particularly the production base, is not geographically confined in most of the examples. Key players work with farms in different regions of the country in order to take advantage of different environmental characteristics, and to deal with the year around supply challenge by having farms in more southerly regions. Moreover, processors are chosen for their compliance with animal welfare standards and are not necessarily in the same state as the key producers.
- Marketing claims, including health and nutrition benefits and production practices, are verified or certified by a third party. All value chain models have some kind of partnership, alliance or certification from a university or health or other organizations serving as third party verification of marketing claims. For example, the American Heart Association verifies marketing claims by Maverick regarding the health and nutritional benefits of their products, and CNB uses the Food Alliance to certify that their animal handling practices are humane.
- Leveraging of common marketing claims. All the value chain models emphasize the same marketing claims: supporting family farms, health and safety (no antibiotics, no hormones), nutrition (CLAs and Omega-3s), animal welfare and the environmental sustainability benefits of their production and processing practices.
- Key players set standards and provide technical assistance to their producers to achieve them. Most of the key players provide services and technical assistance to their producers in breeding, feed, standards compliance and testing.
- Whole carcass. Almost all the key players in the value chains buy either the whole animal or the whole carcass.
- Ownership versus outsourcing. Other than the vertically integrated models, most value chains do not involve ownership of capital assets (e.g., processing plants, finishing lots, cut and wrap) by the producers or even the marketers. Rather, close collaboration with specialized intermediaries to ensure that the end market quality and safety requirements are met provides economies of scale that keep the cost of the product competitive.
- Buy plans and production plans. Several of the value chain models sell the product *first* by negotiating buy plans with major customers, and then *plan* production with their suppliers and processors, taking into account suppliers' capacity to provide product at different quantities and times of the year.
- Retaining ownership of the animal. The point at which ranchers turn over ownership of the animal varies by value chain model, with some selling at the cow/calf stage or at harvest, and some retaining ownership all the way to the wholesale or retail buyer. Margins are not related to retained ownership, but to cost of production and premiums gained.

Table 1: Rancher Role and Ownership under Different Value Chain Models



Value Chain	Artisanal	Core Producer	Marketing Cooperative	Independent Marketer	Vertically Integrated	Processor
Cow/Calf	X	X	X	X	X	X
Raising	X	X	X	X		X
Finishing	X	X	X	X		X
Harvesting	X		X			
Aging	X		X			
Marketing	X		X			
Distribution	X		X			
Wholesale/Retail	X		X			

What is interesting about all of these models is that there are a variety of creative ways that natural and grass fed beef is getting into the market. The most successful have been either the very small scale artisans selling to local markets, and the very large scale commercial models selling nationwide. What has been more challenging—and more relevant to the NCNM/SLV context—are the attempts to develop models for medium scale commercial production for sale to local or regional markets.

The two newest experiments at the mid-scale, ALG and Polyface/Chipotle, are promising, but are not yet fully tested. The close partnership and long term relationship between the buyer and producers that is required for these approaches—where the buyer essentially provides extension and other services to the producer to be able to meet its own volume and quality requirements—is a model that foreshadows the potential future development of value chains to serve local markets. It is a model that has worked in other industries and other countries. It requires a strong commitment and investment on the part of the buyer to sourcing locally, and a key to success will be finding those buyers willing to make the effort. It also requires producers who want to scale up, and are willing to overcome the difficulties and risks of developing the value chain. A variety of national and regional restaurant chains and national distributors are exploring ways to source locally, even investing in farms, that is resulting in growing opportunity for small local farms to participate in creating new value chains.

In the end, the question for producers will be, which model offers the best margin between the premium captured and cost of goods sold? That question can only be answered by local experimentation and risk taking to find the model that works in the market that is being targeted. The assumption has been that best model for the producer is one in which they own the animal as long as possible, eliminating the costs of middlemen and capturing a larger share of the final consumer price. The fact of the matter is that the longer the animal is owned, the higher the direct costs to producers, especially without economies of scale, and a higher share of the final price may or may not cover the extra costs or result in a margin.

Producers have to make another choice in determining which model might work best for them. If the goal is to sell locally produced, locally processed, and locally marketed GFB, some of these models may not be relevant, particularly those in which the value chain is geographically dispersed. If the goal is to capture market opportunity in GFB



and make a profit and sustainable livelihood, then focusing only on the local market, at least in the short term, may not be the best strategy. One option is to participate in one of the existing value chains, specifically those that promote family farms. This would provide access to markets, technical assistance, and knowledge of breeding, feed and other standards that would improve quality and competitiveness of local product. Although, this road would not necessarily lead to local sales, it would better position local producers to develop local market opportunities over time.

Lastly, the Taos Mountain Beef (TMB) effort offers some lessons learned as well. The TMB vision was positioned to be a vertically integrated/core producer/cooperative approach aimed at the local Taos market, whose objective was to own and control production, processing, and marketing. One problem was that the approach was developed without reference to the actual market. TMB chose the most difficult and smallest market to supply—local restaurants and stores—which offers the smallest margins and the greatest challenges and costs in terms of selling the entire carcass. Moreover, the public relations efforts moved so fast that demand was generated before any kind of production capacity or volume was developed and they could not deliver. TMB also focused on building its own processing capacity, but the volume of supply of grass fed beef was never going to be enough to make a plant viable, without also serving the commodity market. Social and educational objectives related to grant funding also detracted from developing a viable bottom line business strategy.

Another lesson learned from the TMB experience, as well as other initiatives in New Mexico and Southern Colorado, relates to implementation of economic development initiatives in general. Past initiatives have generally been grant-based, non-profit approaches, which often fail to develop viable business models, because true costs are not taken into account, true risk is mitigated and therefore investments made where they otherwise might not have been made by the private sector. When the grant or subsidy is gone, the activity ends, because a sustainability strategy is not in place. At the same time, because viability depends on the continuation of the grant or subsidy, more effort is spent on the constant jockeying for funding from the government, than on the business opportunity itself. This is exacerbated by the nature of grants, which are aimed at social goals, equity, education and participation, rather than commercial viability.

The lesson learned from this experience is that economic development initiatives aimed at developing sustainable business opportunities should be led by the private sector, based on a market-based business strategy and identified entrepreneurial leadership. Publically funded economic development initiatives can be helpful by facilitating opportunity, not by entering the market as a non-commercial actor in the value chain. Lastly, while this pattern is evident in past initiatives, no effort appears to have been made to garner lessons from these experiences so that new initiatives can learn from and avoid the same mistakes.

The following sections examine the characteristics of NCNM/SLV local demand and local supply, and, informed by existing models and lessons learned, assess the potential for developing viable value chains in NCNM/SLV.



6 MARKETS

Value chains are defined by their end markets, the final consumer. The preferences and buying habits of final consumers determine price, quality, quantity, and timing of successful products or services. Therefore, in this section, we examine the behavior and preferences of consumers and institutional buyers of beef products in NCNM/SLV, and identify current competitors in the local market. The aim is to understand market demand in order to develop an appropriate value chain models for local producers that can supply a competitive product and earn a margin.

6.1 Results of Consumer Surveys

We reviewed a number of past consumer surveys to inform our analysis:

- Focus groups done in the Midwest by FoodRoutes and the Midwest Collaborative²² came up with the following findings: participants buy meat according to how it looks; people were most concerned about disease and bacteria and less about hormones and antibiotics; health benefits were important but not at the expense of taste; ease of use and price were key; marketing should focus on direct benefits to the consumer; environmental benefits of pasture-raised beef were not so clear to them though they do see benefits to local ranchers and the local economy. Two things were essential to them—that there is a commonly understood definition involving well-publicized and clear standards and that standards are verified (this was more important to them than the particular term chosen such as “pasture raised” or “free range”).
- An Iowa State University study²³ found that factors important to steak buyers were: region of origin, use of growth promotants, cost of cut, whether the steak is tender, and traceability. The least important factors were: farm ownership, animal feed used, steak cut, animal breed, and whether the product is certified organic.
- A survey conducted in 2004 by the Leopold Center at Iowa State University indicated that respondents were most aware of the health benefits and humane treatment associated with pasture-raised beef and dairy and were less aware of benefits to water quality and decreased antibiotic use. However, only a small number (14%) said that “where and how” animals were raised affected their purchasing decisions. The study concluded that “although many consumers may understand and value these augmented product benefits, they are not likely to be

²² Kim Shelquist, *Pasture Raised Products Message and Strategy: Consumer Focus Group Study* (FoodRoutes Network/Midwest Collaborators, October/November 2002).

²³ Brian Mennecke, Anthony Townsend, Dermot Hayes, and Steven Lonergan, *A Study of the Factors that Influence Consumer Attitudes Towards Beef Products Using the Conjoint Market Analysis Tool*. (Ames, IA: Iowa State University, 2006). www.agmrc.org/NR/rdonlyres/2F7A4F83-8D26-4457-B2BB-7D6D30D74FBF/0/AStudyofFactors.pdf



regular purchasers of these products unless the taste, freshness, quality, appearance, and value of the products are consistently assured.”²⁴

- Results of research by Lauren Gwin show that although the current grass fed industry is targeted primarily at “atypical” consumers (e.g. people with particular awareness of and interest in food and agriculture), the vast majority of those customers will only buy grass fed meat if it meets certain expectations around “price, convenience and the 'eating experience.'”²⁵ She found that most customers expect a fresh product year-round, and most of them want to be able to purchase it at the nearest grocery store.

Although the results of each survey vary, the common theme that emerges is that the importance of production characteristics (how and what animals are fed, whether antibiotics are used, environmental impact, etc.) are outweighed by standard consumer preferences for taste, tenderness, quality, price and convenience.

6.2 Wholesale/Retail Survey

Northern New Mexico has a vast array of restaurants, food stores and institutions that serve food. To begin to understand possible markets for Northern New Mexico grass fed beef, we conducted interviews with 31 establishments in Albuquerque, Santa Fe and Taos. Interview questions focused on what kinds and how much beef were currently purchased, factors and barriers influencing purchase, and interest in local, grass fed beef.

Description of Informants. The establishments we interviewed were selected based on a perceived likelihood of interest in grass fed beef and geographical representation. The establishments included:

- 17 restaurants
- 8 grocery stores
- 2 meat distributors
- 4 institutions (school/hospital)
- 1 food processor.

The restaurants were primarily high-end restaurants, although some were mid-range with an identified interest in grass fed or natural beef. A number of the restaurants we interviewed had a focus on steak and other meats, while the rest were a mix, including contemporary cuisine, New Mexican, and diner/pub.

²⁴ *Consumer Perceptions of Pasture-raised Beef and Dairy Products: An Internet Consumer Study*, (Leopold Center. Iowa State University. February 2004), p.33.

²⁵ Lauren Gwin, *New Pastures, New Food: Building Viable Alternatives to Conventional Beef*, PhD Dissertation (UC Berkeley, 2006)



We interviewed primarily natural/organic-focused grocery stores, both national chain and local, one conventional supermarket and one Mexican market. Of the distributors, one was a large-scale national company and the other a local, meat-only distributor. We interviewed two colleges, one private high school and one hospital. The food processor was a small-scale sausage producer.

Current Beef Purchasing. Approximately one third (32%) of respondents purchased less than \$1000 worth of beef per week, nearly one half (45%) between \$1000 and \$5,000 per week (half below \$2500, half above) and less than one quarter (19%) of respondents bought between \$5,000 and \$25,000. The large national distributor purchased over \$100,000 of beef weekly. Typically, restaurants purchased on the lower end and grocery stores on the higher end, but several restaurants bought up to \$5,000 per week (in part because of volume and in part due to price).

Across all sectors, most beef was purchased fresh. Any frozen beef was generally individually portioned burgers or low-end steaks or ground chuck. Twelve out of 32 respondents received their beef in the form of primals or sub-primals, 10 received at least some of their beef in individual portions and 19 cut and wrapped to their own specifications. One grocery store and the meat distributor purchased whole carcasses. Overall, respondents purchased premium steaks the most with ground beef a distant second. Respondents were not as interested in sub-premium steaks, and roasts were the least popular cut.

Nearly one third of respondents (9 total) currently buy some beef grown in New Mexico and three of them (two restaurants and one grocery) bought all of their beef locally. Overall, 51% of the beef purchased was commodity beef, 31% natural, 11% local, 8% grass fed (non-local), 3% organic and less than 1% grass-finished. Eight restaurants, one grocery store, and the local distributor currently bought some local beef. A number of restauranters commented that they only bought local beef occasionally for specials, while others used it on their regular menu.

Three restauranters purchased their meat through the local meat distributor, but most got their meat through large-scale distributors such as Sysco, Shamrock, Zanios and US Food Service. The most frequent brands of natural beef were Coleman Natural, Harris Ranch and Niman Ranch. High-end commodity beef came from Newport, Buckhead and international sources. One restaurant bought grass fed beef from Uruguay and one bought organic from a New Zealand supplier. Local grass fed beef

**Results for Restaurants Only
(Sample of 19 Restaurants):**

Weekly beef purchase:

>\$1,000	47%
\$1,001-\$2,500	29%
\$2,501-\$5,000	24%

Form beef is received in:

Cut and Wrapped	39%
Primals/Sub-primals	35%
Individual Portions	22%
Whole Carcass	4%

Fresh	83%
Frozen	17%

Preferred Cut:

Premium Steaks	69%
Ground Chuck	31%
Sub-Premium Steaks	0%
Roasts	0%

Second Choice Cut:

Sub-Premium Steaks	45%
Ground Chuck	27%
Premium Steaks	18%
Roasts	9%



came from Pecos River Ranch and Canyon River Ranch.

Factors Influencing Beef Purchases. We asked respondents to rank from one to six the factors that dictate what kind of beef they purchase. The mean scores were (from most to least important):

Table 2: Factors Influencing Beef Purchases

Factor	Mean Score
Quality (flavor)	2.24
Consistency of Quality	2.89
Price	3.13
Availability of Consistent Supply	3.31
Customer/market preference/demand	3.45
Market Image and Company Value	3.93

Two respondents said all these factors were equal and one did not respond.

Local Beef. Twenty six of 32 respondents, or 81%, said they were interested in finding out more about local beef. We asked them to indicate which factors would encourage them to buy New Mexico beef. The top four responses were:²⁶

Table 3: Factors Influencing Purchase of Local Beef

Factor	Percentage
Favorable price	21%
Favorable quality	21%
Availability of a consistent supply	20%
Supporting the local economy	19%
Customer concerns about food safety	16%
Improved environmental impact	16%
Customer preference for other reasons	16%
Freshness	12%
No fuel surcharge	10%

While favorable price was the most commonly selected factor, most respondents who were interested in purchasing local beef were willing to pay more for it. Thirty five percent were only willing to pay 10% extra, but 27% were willing to pay between 15% and 20% extra and another 27% were willing to pay between 30% and 50% premiums for local grass fed beef. Three respondents were not willing to bear added costs for local meat, and four could not answer.

Establishments that were already buying local beef were very positive about their experience and a number of other respondents indicated that they prefer grass fed and/or local beef, but had encountered obstacles such as price and lack of consistent supply. Several respondents commented that local beef purveyors were not able to meet the volumes and frequency needed. Another common concern was that grass

²⁶ Two respondents could not answer because all purchasing decisions are made by their corporate offices.



fed beef looked and tasted different and was thus harder to sell to customers. One chef commented that he had tasted local grass fed beef and it was too dry, did not have enough marbling and was difficult to cook properly. Another said the meat was too tough, while one grocer noted that grass fed beef went bad faster than other kinds of beef. Two respondents also mentioned the issue of carcass utilization, indicating that local producers had too much ground chuck and lower end cuts and not enough high-end cuts.²⁷

One restaurateur responded to the question by going into great detail about his experience with Taos Mountain Beef, a pilot project in grass feed beef that folded before its first shipment. The buyer said he had tested their product, liked it, and was willing to pay more. He wanted to begin the ordering process but they could not meet his volume requirements. He said they had too many burgers and ground beef and not enough quality cuts and the cuts were not “up to par.” Then he never heard from them again. He has his doubts that a local operation with such low volume and no processing or cut and wrap capacity could meet his standards and requirements consistently. He sees the biggest problem as carcass utilization. He is still keen to find a way to buy local grass fed beef, but will not compromise quality or consistency.

Another restaurateur had a different take on grass fed. He said that since they had worked for many, many years to establish a certain reputation and quality, “it’s not worth the grief” he would get from his customers if he made a change in his menu. He had also tried a taste test of the Taos Mountain Beef product, but thought it was just “too different” and introducing it was “not worth it”. He said if he was starting a new “concept” he would try everything, but they have an established concept that works and they are not going to change. Because “times are tough,” he does not want to increase his prices so he does not want to start buying more expensive beef. If he were to buy grass fed beef, it would not be tenderloins but a cheaper cut. He was passionate about the established relationships he has with his vendors whom he “trusts” to give him the best price, and he does not “shop around.”

Some respondents, however, also had frustrations with non-local beef suppliers. Again, consistency, availability and price were common concerns. Two restaurateurs also mentioned that it was difficult to order four days in advance as distributors required and said they would prefer next-day delivery. One mentioned that because of the lag time, he often ran out and had to go to a local grocery store and pay retail prices.

**Results for Restaurants Only
(Sample of 19 Restaurants):
Continued**

Percentage of Beef

Purchased:

Commodity	42%
Natural	31%
Grass-Fed	22%
Organic Grain Fed	5%

Organic Grass-Fed	16%
Local Grass-Fed	13%

Factors Influencing

Purchase:

Quality	2.25
Consistent Quality	3.13
Consistent Supply	3.47
Price	3.62
Customer Preference	3.71
Image/Values	3.91

Willingness to Pay:

No additional

²⁷ Results above indicate, to the contrary, that there is a large market for ground chuck.



Conclusions. There is a demand for local beef (including GFB) that is not being met, however, there are very specific requirements a supplier must fulfill to serve potential customers. Restaurants are a promising, but demanding market. Many of them know what grass fed beef is and some already recognize it as a feature they can market. They also would prefer to support other local businesses. Restaurants, particularly high-end ones, were most willing and able to pay a premium for the quality of beef they demand. Local grass fed beef producers, however, must prove they are up to the challenge of producing meat that is tender and available consistently in the kinds of high-end cuts restaurants demand. If local grass fed producers can produce a consistent volume and can take advantage of their proximity to customers by offering frequent/on-demand delivery service and lower delivery surcharges, they may have an edge over larger suppliers. Developing the market for local grass fed beef, however, will still require a good deal of awareness building, both to the buyers and their end customers. Many of the buyers do care about building the local economy and protecting the environment, two of the key selling points of local grass fed beef, but concerns about quality, consistency and price are the bottom line.

6.3 Competition

To identify competitors in the market who are currently supplying local consumers and wholesale and retail buyers, we looked at competition in terms of price, products, and companies.

6.3.1 Price

Table 4: Beef Retail Prices in Taos Grocery Stores (as of July 11, 2008)

Local Supermarket	Ground Beef			Top Sirloin Steak		
	Natural	Grass Fed	Organic	Natural	Grass Fed	Organic
Albertson's (Morgan's)	\$4.99/lb			\$6.99/lb		
Cid's (Coleman)	\$4.99/lb			\$9.99/lb		
Smith's (Coleman)	\$4.99/lb		\$5.99/lb			
Super Save (Commodity)		\$2.49/lb			\$4.69/lb	

On the date that we checked retail prices, there was no grass fed/grass finished product available. Only organic, natural grain finished and grass fed/grain finished beef products were available.

Based on interviews with individual ranchers that sell product to local retailers (stores and restaurants) GFB ground was selling for \$3.50/lb wholesale and high end cuts up to \$20-25/lb wholesale. Prices were based on producer costs and we do not know whether they were making a profit. One restaurant sold the ground beef as burgers on "special" at \$6 a burger, representing a 75% markup. Our survey indicated a range of potential premiums above conventional beef wholesale prices of from 10 to 50%.

We also looked at online prices for Internet sales of some of the competitors selling in the local market.



Table 5: Consumer Retail Price Per Pound of Selected Brands, based on Phone or Internet Orders, not including shipping (\$/lb)

Brand		Ground Beef		Steak
Maverick Ranch	Natural*	\$5.99		
Niman Ranch	Natural*	\$13.98	Natural* Top Sirloin	\$26.98
Harris Ranch	Natural Patties*	\$7.25	Natural* Top Sirloin	\$24.50
Tallgrass Beef Company	Grass Fed/Finished	\$6.99	Grass Fed/Finished Top Sirloin	\$13.32
Polyface Farms	Natural*	\$4.25		

*grass fed grain finished

6.3.2 Products

“Natural” beef products, promoted primarily as free of hormones and anti-biotics, are the closest competitors with, and cheaper substitutes for, GFB products. Natural beef products benefit from a greater market share, lower prices, lower production costs and higher consumer awareness than GFB (and well developed value chains). Moreover, natural products also market characteristics of environmental sustainability, health and nutrition benefits, and animal welfare. Lastly, because natural products finish using some grain and corn, they achieve a degree of marbling, taste and tenderness that are closer to current consumer expectations than GFB and require less “re-education.”

GFB is by default a “natural” product, with the added production practice of finishing on grass. Finishing on grass is essentially the only differentiator from natural beef products, offering a marginal benefit in terms of nutrition, and a marginal benefit in terms of animal welfare (since animals are not necessarily put in pens for finishing). Because production costs are higher for GFB, prices are higher, and the question is whether marketing alone can create value from these marginal differences that results in a premium that covers the higher costs of achieving them.

6.3.3 Competitors

One of the major challenges of developing a value chain in NCNM/SLV, is that, despite the focus on local production and markets, in fact, local producers are competing nationally and globally. Currently in the Taos market, natural products are available from Coleman, Harris Ranch, and Niman Ranch, and grass fed beef products are available from Uruguay and New Zealand. According to USDA, most grass fed beef in the US market comes from Australia and New Zealand.

While we think of “grass fed” as being a market differentiator, the fact is that the rest of the world’s beef production is traditionally grass fed. The US is the only country that fully developed the industrial feed lot production technology. For example, in Uruguay, there are about 29,000 pasture-based beef and sheep operations, of which 19,000 specialize in cow-calf operations, 6,000 specialize in calf to beef operations, and 4,000



specialize in finishing. Over half are family owned ranches of less than 200 acres.²⁸ Consequently, as US demand for GFB increases, demand is being met by foreign suppliers whose industries already produced GFB on a commercially viable scale. Uruguay and New Zealand are some of the biggest suppliers of GFB to WholeFoods, for example. In other words, our local ranchers are competing globally even when they supply local markets—and having to meet international standards to compete successful. This challenge requires ranchers together with all stakeholders in the local value chain to understand and address the competitive requirements of the market they jointly are trying to capture. A better understanding of the competitive advantages of the foreign suppliers is required and further study recommended.

6.4 Marketing Strategies

There are a number of considerations that local producers and value chain stakeholders need to take into account in developing a marketing strategy:

Local versus Non-Local. As evidenced by the above discussion, there are advantages and disadvantages associated with a local marketing focus. And there are opportunities to participate in existing value chains that provide access to premium markets outside the local market.

Based on the survey, there is evidence that there is a potential 10-50% premium that buyers are willing to pay for a local product. This improves the chances of earning a higher margin. Proximity and convenience are critical advantages that local producers can leverage. Loyalty and personal relationships play a key role in local buying as well. Selling locally may be a value that overrides the potential earnings that might otherwise be gained by selling into other markets, and many ranchers will continue to direct market to local customers as long as they are getting a margin.

The ability to expand local agricultural opportunity based on the local market, however, depends on what “local” means and how big that local market is. The assumption generally is that “local” is the direct community in which the producer lives or is adjacent to. But often those very local markets are too small to support the kind of expansion that would represent substantial changes in revenue and livelihoods for producers. In fact, most successful direct marketers live close to very large metropolitan areas, which serve as their “local” markets—Polyface Farms is the prime example. Consequently, in our context, Santa Fe and Albuquerque (at least) must be considered within the local market definition.

Moreover, in the larger context of local economic development, exporting a product that brings new money into the local economy has more economic impact than a local product bought by a local consumer that simply redistributes wealth among the local population. And in this regard, exporting to larger external markets may actually better address the desire to develop and protect a local “foodshed” that creates local food security. Larger external markets will bring new resources into the community and

²⁸ Michael Boland, Lautaro Perez, and John A. Fox, *Grass Fed Certification: The Case of the Uruguayan Beef Industry* (Choices Magazine, 2007:1).



provide the scale that may allow agricultural production to expand to a level that can realistically address local food security. Without this ability, local producers will continue to sell primarily to the higher income members of the local community who will reap the benefits of better nutrition and health, while they remain out of reach to lower income local consumers.

At the same time, there are existing, well-developed value chains into premium markets, in which local producers could participate and improve their competitiveness. Many of the value chains discussed above sell in the local Taos market, but that would not guarantee that the particular product sold came from the local producer. Even without the local factor, however, the opportunity created by participation in broader value chains still achieves other value-based objectives, such as supporting family farms and maintaining land-based agricultural traditions.

Lastly, there is evidence that opportunity is growing to work with larger buyers to reorient existing value chains to source and sell locally (Chipotle). Given gas prices, this may be the most viable strategy for NCNM/SLV.

Natural Grain Finished versus Natural Grass Finished. “Natural” beef products have gained market share and premiums by being marketed as having been raised on a vegetarian diet without anti-biotics or hormones. Most also claim the benefits of natural beef in terms of environmental sustainability, animal welfare, promotion of small family farms, health and nutritional benefits. Country Natural Beef, in fact, claims that “a controlled study done by Oregon State University showed only a slight decline in the Omega 3 levels and a significant benefit on CLA when compared to 100% grass fed.” The only real difference then between the Natural beef products found in the stores, and Grass Fed Beef as we have defined it, is that the latter is finished on a diet that include grains to improve taste and tenderness—the two primary decision factors for consumers. That difference represents the difference in production costs (faster growth), lower retail prices, and higher quality (more fat). Finishing on grass takes longer and results in a leaner, lower yield carcass, thus making it more expensive to produce and less competitive in terms of price, taste and tenderness.

Given that, it is hard not to conclude that producing and marketing a Natural product might be an alternative for NCNM/SLV producers to consider—or at least to consider a more flexible definition of “grass fed” to allow producers to overcome these competitive disadvantages. Again, as discussed above, existing value chains for Natural beef should not be overlooked as an option for local producers that can meet the established standards and protocols.

Fresh versus Frozen. All restaurants and retail outlets sell fresh product. In order to be able to offer a consistent fresh supply all year around, producers need to solve the challenges of wintering their animals or augmenting their supply base from other regions in more temperate zones. Frozen product does not garner the premium that fresh product does.

Whole Carcass versus Custom Cuts. Almost all the value chains we examined are characterized by key players that buy either the whole animal or the whole carcass



from small producers, and consolidate supply at the finishing, processing or marketing stages to gain economies of scale in meeting market demand.

Taking these tradeoffs into account, we analyze in the following section the present structure of the NCNM/SLV value chain, in order to determine what approach might work best in the local context.

7 VALUE CHAIN ANALYSIS

7.1 Value Chain Structure and Relationships

This section describes the key stakeholders in the value chain and their interrelationships, providing the basis for assessing the potential to develop market driven value chain models. AISD interviewed over 40 individuals representing all segments of the value chain, including ranchers, processors, input suppliers, USDA, New Mexico Department of Agriculture (NMDA), NMSU Extension Services, and industry associations. The map that follows the discussion presents a graphic representation of the current value chain structure in NCNM/SLV.

Ranchers. As described above, the NCNM/SLV production area is characterized by a large number of very small scale ranches. For the most part, ranchers operate independently of each other, though one cooperative exists in southern Colorado, Rio Costilla Cooperative Livestock Association, which has 60 members. Lack of collaboration has consequences for market access. For example, local ranchers in the study area own a wide range of different breeds and grow their animals on a variety of feed and forage, based on their own individual experience and experimentation, resulting in inconsistent product quality in terms of weight, fat content, taste and tenderness. Local producers are competing against each other based on these differences, which are difficult for consumers to detect or verify. Under these conditions, it is difficult to establish a regional brand or reputation for quality that can be marketed. By the same token, lack of cooperation results in missed opportunities to achieve economies of scale and reduce costs and risk.

Local ranchers commonly sell their cattle at auction at the age of 12 to 18 months and at weights ranging from 900 to 1200 pounds. These animals are assumed to be going into out of state feedlots for the commodity market. Some ranches have direct relationships with specific feedlots and provide them with a regular supply.

According to long time producers, many local ranchers have always saved some cattle for their own and their neighbors' consumption, commonly finishing animals on grain for one to two months to improve taste and tenderness. Consequently, there is a local tradition of finishing on grain, as well as direct marketing and preparing and eating grass fed beef. The latter tradition has become the basis for efforts to expand local marketing of grass fed beef. A number of local ranchers sell beef directly to local customers on the hoof or in the form of halves, quarters, sub-primals, or even custom cuts, depending on the preferences of the customer. One rancher that has developed



a substantial “local” direct marketing network, is selling 70% of his product to customers in Santa Fe, about 20% in Albuquerque, and the rest in the “neighborhood.”

We found, however, that many of those that are selling direct to local customers are doing so on the side, or even as a hobby, while earning their core income from selling to the commodity market, from other ranch- or farm-based activities, or from jobs or careers entirely outside the realm of ranching. All of those we spoke to have difficulty selling all the cuts from the carcass and many have large amounts of frozen product in storage. Most are selling direct to individual families, but some also have sold to local restaurants, local consumer cooperatives, pet food stores, and, in one case, to a food processor that makes tamales. Most are selling seasonally, with only one that we spoke with wintering animals for year around sales.

Processors. The processing segment of the value chain is characterized by small custom houses, serving the needs of individual ranchers, as well as hunters of wild game. There are three USDA approved processors that serve NCNM/SLV: the Mobile Matanza in Taos; Mel Martinez in Romeo, CO; and Mike Miniffee in Moriarty, NM. All offer slaughter, aging, cut & wrap, and freezing capabilities. We were not able to get hard numbers on total capacity, but “guesstimate” it to be about 3000 animals per year (based on an estimated average of 4 animals a day at each of three USDA approved facilities for 52 weeks). The processors work on a custom order basis with individual ranchers. As the processors have no direct market linkages to buyers, they do not take ownership or play a role in consolidating supply or marketing.

A small *matanza* in Sanford that is not USDA approved offers services to private customers who do not sell their meat commercially. There are a few small local meat shops with cut and wrap capability. We visited a new *carniceria* in Taos that specializes in Mexican cuts of meat, which sources its meat from Arizona.

Supporting Markets/Input Suppliers. A number of businesses provide goods and services to the ranchers, representing critical inputs that affect the competitiveness of the final product (e.g., taste, tenderness, marbling, etc.) and have an impact on productivity and margins. In some cases, key specialized services that could develop a viable value chain are entirely absent. Supporting markets include:

- **Forage/feed producers.** Forage/feed producers who grow, harvest and bale grass for sale to ranchers who do not grow their own hay or who need supplemental supplies, are probably the most important input suppliers to the sector, due to the critical nature of feed content and availability to cattle growth, tenderness and taste. Moreover, what cattle eat determines how they can be marketed and what claims can be made regarding their production characteristics and nutritional value. Feed is the single largest cost to producers, even for those who grow their own feed (due to other costs such as equipment, diesel, labor, etc.)
- **Seedstock operations.** The second most important input suppliers are the seed stock operations, who raise bulls and influence the genetics that determine growth, tenderness and taste.



- Marketing services. All the ranchers we talked with do their own marketing and sales. We did not identify any businesses specializing in marketing or supply consolidation services for the ranching sector. Currently individual ranchers are direct marketing in Taos to the same local restaurants and to Cid's, each offering small volumes of different quality, price, cuts, taste and tenderness, and varying delivery schedules. None are able alone to meet the requirements of one restaurant let alone several. And they still need markets for other cuts. At the same time, the ability of restaurants to work with these small producers is limited. The perception of ranchers is that while the restaurants say they want to buy local, they rarely do, and ranches do not accept that price, volume, and consistency of supply are valid reasons for not buying locally. As a result, the local value chain is disjointed and characterized by lack of trust and cooperation.
- Sale barns/online auctions—Although there is a trend in the closure of sale barns, the ranchers we spoke with gave no indication that access to these markets was an issue, for selling to the commodity market. According to the Animal and Plant Health Inspection Service (APHIS), of the US Department of Agriculture (USDA) there are 17 sale barns in New Mexico. Producers seem to go to three specific markets from NCNM/SLV: Winter Livestock Auction in LaJunta, CO; Southern Colorado Livestock Auction, Montevista CO; and Pueblo, CO.
- Veterinarians. Based on our interviews, we only identified two large animal veterinarians serving the entire NCNM/SLV study area, one or both of whom are near retirement. Access to large animal veterinary services may become a constraint in the value chain.
- Artificial Insemination (A.I.). A.I. is not a common practice in New Mexico, except by those who have registered stock. Most producers use bulls for breeding. Except for veterinarians, there is no local semen provider. One of the largest A.I. companies, American Breeders Services, has an office in Clovis, but they provide A.I. services to the dairy industry. Most NMSU Extension field offices, however, own an A.I. tank, which can be filled with liquid nitrogen and semen stored for a few days, or weeks if necessary. These tanks were procured under a defunct A.I. program from 15-20 years ago, and currently sit idle.
- Ultrasound services. To our knowledge, ultrasound services are not easily available in New Mexico, but are critical to testing for carcass quality and providing the information needed to manage genetics for higher quality beef. One rancher in Montevista shared costs with a small group of local producers to bring an ultrasound company in from Mississippi to test their carcasses on a one time basis. The rancher feels the investment paid off because they got the information they needed to increase the quality and productivity of their herds. Ultrasound is also costly, because for each animal tested, about 3 steaks are lost from the carcass due to sheering.
- Shipping. Most ranchers who sell through the internet or out of state use Fedex or UPS. The cost of shipping is often as high as the cost of the product, however,



discouraging out of state customers from buying and reducing the opportunity for leveraging the internet for sales.

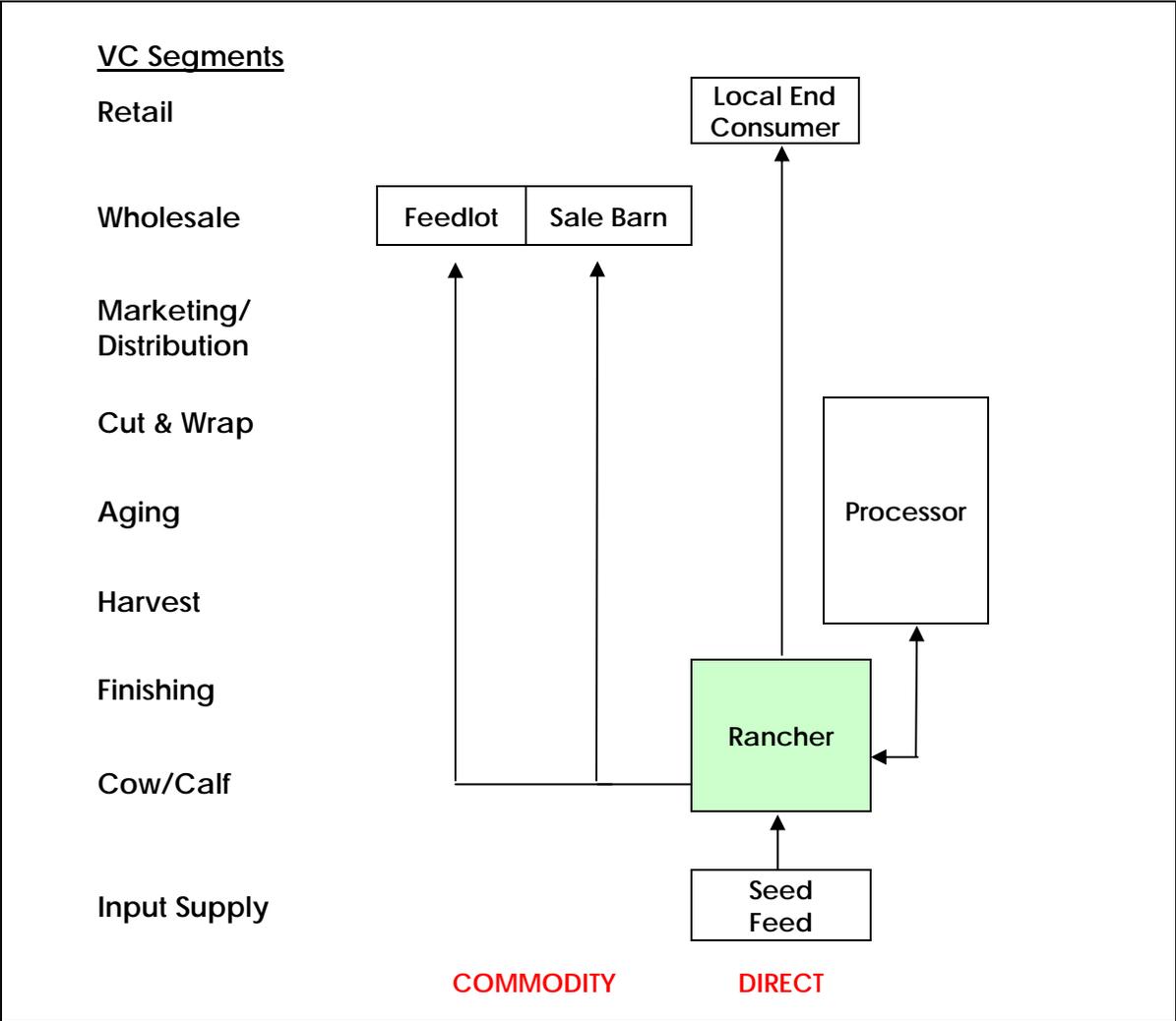
- Transportation/Cold Chain. Most ranchers have their own trucks to transport animals and some have refrigerated trucks for transporting finished product. Most deliver product in coolers with ice packs, which would not meet commercial standards for food safety. The Taos County Economic Development Corporation (TCEDC) has a refrigerated truck that delivers as far as Albuquerque. We did not identify specialized transport companies serving the sector in NCNM/SLV.
- Distribution. Regional distribution is done by the large companies, such as Sysco, Zanio's, Shamrock and US Foods. The only distribution network that works with local producers is La Montanita Cooperative, a consumer cooperative based in Albuquerque, with stores in Albuquerque and Santa Fe. The La Montanita distribution network reaches to the San Luis Valley.
- Information Technologies/Traceability. Based on our interviews, we did not find evidence of significant use of information technologies for record keeping or traceability. Computers are used primarily for accounting and management. Many ranches have their own websites. One rancher we talked to uses the services of AgInfoLink, an IT firm specializing in beef traceability to help producers comply with regulations related to mad cow disease (Bovine Spongiform Encephalopathy or BSE). Radio Frequency Identification (RFID) tags are attached to the ears of newly born calves, allowing the rancher to record birth and growth information that meets regulatory requirements. Other ranchers use hand written records with little to no third party verification. This has led to problems in verifying age, particularly whether animals are more than 30 months old, a factor related to occurrence of mad cow disease. The rancher who uses the technology, however, identified problems with use in the field as well as telecommunications access as constraints to effective adoption and utilization.
- Third Party Certification. Some local ranchers have achieved organic certification from the state commission, but several have let the certification lapse, due to expense, burden of record keeping, and evidence that the certification was not necessarily providing the market advantage that was expected, compared to the cost and effort of maintaining it. One processor has been certified by Whole Foods, because one customer plans to supply them with local product and paid for the certification (about \$1000). We did not interview a large enough sample of ranchers to know what other certifications might be sought, but in general, there does not appear to be a substantial investment in third party certifications, which are becoming basic market entry requirements, and no longer market differentiators.
- Finance and insurance. In the case of finance, the Farm Credit Service Agency (FCSA), www.farmcredinm.com, and Farm Bureau Financial Services, www.fbfs.com, are the key suppliers of financial and insurance products to the beef industry. The FCSA offers livestock loans for "care and feeding, or refinancing of debt on livestock," and crop insurance. The Farm Bureau offers ranch insurance, crop



insurance, livestock insurance, and other products. Some ranchers we spoke with found it difficult to access these services, and that it was easier to get insurance from an after-market broker based in Scottsdale, AZ, but at a much higher price.

- Graphic design services. Although local graphic design capability is readily available, we did not identify firms providing graphic design services to the ranchers, but judging by the quality of labels and packaging design on local products, there is a need for professional services in this area.

FIGURE 2: NCNM/SLV VALUE CHAIN MAP



Regulatory and Other Stakeholders. While not technically members of the value chain, public sector regulatory agents and non-governmental organizations have an interest in, as well as an influence on, the competitiveness of the sector:



- New Mexico State University Cooperative Extension Services, NMSU Extension Services provides a wide variety of services to the ranching sector to enhance productivity and competitiveness, in reproduction, breeding and genetics, herd health, management, nutrition, and pasture and forages. http://extension.nmsu.edu/farm_ranch
- Food Inspection Services (www.fsis.usda.gov). As of August 13, 2007, the Food Safety Inspection Service (FSIS) of USDA assumed responsibility for the meat and poultry inspection programs in the State of New Mexico. Due to the rapid transition from New Mexico state inspection to federal inspection, the availability of inspectors has presented a short term constraint to producers and processors. Currently, one temporary inspector services all of NCNM/SLV, as USDA brings more inspectors on line.
- Land Conservation Organizations. Land conservation plays a role in the ranching sector not only in terms of environmental sustainability, but in terms of the long term survival of the industry. Organizations such as the Taos Land Trust (www.taoslandtrust.org) assist ranchers to take advantage of the New Mexico Transferable Tax Credit for Land Conservation. Starting in 2008, conservation easements granted in New Mexico will qualify landowners for up to \$250,000 in transferable state income tax credit. Landowners can claim 50 percent of the appraised value of a conservation easement up to a maximum of \$250,000 as a dollar-for-dollar credit against New Mexico state income tax. For example, if the value of the development rights a rancher extinguishes with a conservation easement is \$500,000, they qualify for the full \$250,000. Conservation easements allow owners to decide how their land will be cared for in the future by voluntarily choosing not to develop it, but the land is still privately owned and controlled and can continue to be used for farming, ranching, or sustainable forestry. The Colorado Cattlemen's Agricultural Land Trust (www.ccalt.org) offers similar services to ranchers in Colorado.
- New Mexico Cattle Grower's Association (NMCA) (www.nmagriculture.org). The NMCA is a membership organization that aims to "advance and protect the cattle industry of New Mexico, work toward solutions of cattle industry problems, promote the well being of the industry, provide an official and united voice on issues of importance to the cattle producers and feeders, and to create and maintain an economic climate that will provide members of the Association the opportunity to obtain optimum return on their investments within the free enterprise system."
- New Mexico Beef Council (NMBC) (www.nmbeef.com). The NMBC's mission is "To protect and increase demand for Beef and Beef products in New Mexico through national and state developed consumer marketing programs, thereby enhancing profit opportunities for Beef producers in New Mexico." A key service of the council is access to the Checkoff program (www.beefboard.org), "a producer-funded marketing and research program designed to increase domestic and/or international demand for beef." This is done through promotion, research and new product development, and a variety of other marketing tools.



- Southwest Grass-fed Livestock Association (www.swgla.org). SWGLA (pronounced “Swigla”) is an alliance of producers, consumers, land managers, conservationists, and researchers that seeks to improve human, ecological and animal health, and strengthen local agricultural communities by educating producers, and the public about grassfed livestock products. SWGLA has taken a leadership role in developing opportunity in grass fed beef markets, through information, training, and taste tests.

7.2 Value Chain Constraints and Opportunities

In this section, we review the constraints facing the local ranching sector in capturing opportunity and developing a viable value chain, and the opportunities that can be leveraged to address these constraints to increase competitiveness. A summary of the constraints and opportunities discussed below is provided in Table 6.

Technological/Product Development. The greatest constraint faced by the ranching sector has to do with productivity, given the challenges of the local environment for extending the growing season beyond the fall and through the winter in order to finish beef locally. The constraints include:

- Getting cattle to weight on grass profitably. It simply takes longer to raise and finish cattle on grass, resulting in smaller carcasses and smaller yields. All of these factors combine to create a competitive disadvantage in terms of higher production costs, but results in a premium product for which there is growing demand. Again, the question is whether the market premium that can be captured covers the extra cost to implement true grass fed beef production and finishing practices.

A study by the Colorado Department of Agriculture and Resource Economics in Fort Collins,²⁹ used “enterprise budgeting” to develop a baseline for costs of production for grass fed beef operations in San Luis Valley. The Excel-based budgeting tool is intended for use in production and marketing planning and pricing, by helping producers to identify “the stage of production that secures the greatest returns.” The study collected data from five producers who handle cattle all the way through the finishing stage and developed a representative budget for a grass fed beef operation in San Luis Valley (individual operations will vary according to their own cost structures and management efficiency). Cost and revenue data was input for the cow/calf, summer, winter and finishing stages. The study found that the grass fed beef operations earned positive net returns during the cow/calf and summer stages and negative returns for the winter and finishing stages. The study found a clear comparative advantage at the cow/calf stage.

These results confirm the competitive challenges of producing for the higher premium GFB market. The cost data, however, are from 2005, so the current cost situation may be substantially different. The budget tool developed by the study

²⁹ Joshua Wilson and Dawn Thilmany, *Enterprise Budgeting: An Application to San Luis Valley Grass-Fed Cattle Operations* (Department of Agriculture and Resource Economics in Fort Collins, February, 2005).



should be applied to explore a variety of different value chain structures and markets to identify where there might be a greater return at the finishing stage. An opportunity exists to work with the Colorado Department of Agriculture and Resource Economics to more fully develop and apply the tool.

A study of the profitability of organic, natural and grass fed beef operations, conducted by Iowa State Value-Added Agriculture Extension,³⁰ found that “the conventional beef production system is more profitable than natural, organic, or grass-fed beef.” Natural beef was the second most profitable. The study also found that the premiums that could be captured were “key determinants” of profitability: in order for grain-fed organic operations to be profitable, they must capture a premium of 30-40% more than conventional prices; in order for grass fed operations to be profitable, they must capture a premium of 60-70% over conventional prices. (According to our survey, most buyers were willing to pay a premium of 10-50% over conventional prices.) Again, this study was done in 2006, and current costs and prices have changed, but the results highlight, again, the competitive challenges facing grass fed beef operations.

- Wintering. The costs and risks of wintering cattle are high in NCNM/SLV, from the expense of purchasing hay to environmental threats to the health and welfare of the animals that can result in losses. Additional difficulties arise when calving in winter, in order to achieve a year around supply. The challenges of achieving a modicum of weight gain or of simply maintaining weight during the winter are a major constraint to productivity and competitiveness, especially in a market where the competition operates in or sources from milder environmental zones that have access to grass for longer periods or all year around. Competition with the dairy industry for supplemental hay during the winter is an additional constraint.

The way that many major suppliers are handling these issues is to diversify the production areas from which they source, leveraging a range of environmental conditions and zones for year around production. This argues for exploring cooperation of NCNM/SLV producers with southern producers in New Mexico, as well as other states, to expand the GFB production base to meet volume as well as year around market requirements.

- Finishing. As discussed above, finishing is where differentiation occurs between natural grain finished and natural grass finished. Finishing on grass takes longer and is more expensive than finishing on grain or corn, and results in a lower yield, different quality product. Two questions need to be addressed to confront this constraint:
 - a) Can a mixed forage diet based on local grasses and forage be developed that maximizes the growth, marbling, taste, tenderness, and nutritional value that still meets the purest definition of grass fed, including the USDA marketing claim standard (discussed below)? And,

³⁰ Nicolas Acevedo, John D. Lawrence, and Margaret Smith, *Organic, Natural and Grass-Fed Beef: Profitability and Constraints to Production in the Midwestern U.S.* (August 2006).



- b) What breeds grow and finished best and result in the highest quality carcass on a total grass diet?

To address these competitive constraints, the NMSU Extension Service is proposing applied research in the NCMN/SLV context to identify optimal breeds and forage that meet a) the USDA Grass Fed Beef marketing claim standard; b) market requirements (taste, tenderness, nutrition); and c) production maximization (growth rate, fat content/marbling). NMSU is in the process of developing and seeking funding for an experimental design to modify the existing Ranch to Rail (R2R) program to evaluate GFB. "The Ranch to Rail program is designed to provide feedback to beef producers on how their calves perform in the feedyard and the carcass characteristics expressed by the calves' genetic makeup and previous management."³¹ It is a retained ownership program, whereby ranchers provide a minimum of 5 cattle within a minimum weight range to be tested. NMSU Extension will use its experimental ranches to finish the animals (versus feedlots in the conventional format of the R2R program), slaughter the animals, age the carcasses, conduct testing, and market them. "Marketing data for individual calves is based on weight and ultrasound measurements to achieve maximum net return," along with input from grass finishing.

The design is not complete, but discussions have revolved around conducting tests of two different samples of cattle: one totally finished on grass and one finished on grain to allow comparison. The other challenge is identifying GFB markets in which to sell the product in order to generate relevant economic and financial data. NMSU is currently investigating funding for this proposed program, which will serve as an essential intervention in the development of a viable GFB value chain in NCMN/SLV.

- Processing. Processing capacity is limited in NCMN/SLV, though one plant recently expanded its capacity. Along with basic capacity, key constraints include the cost of third part certifications, stricter animal welfare standards, and issues surrounding aging of GFB. Regarding the mobile matanza, the specific constraints to ranchers were the costs and risks of the requirement for disposal of the waste from slaughtering.

The opportunities offered by developing a value chain approach, are in two areas: if a group of ranchers are producing according to a buy plan from a major customer, the processor is better able to plan operations to optimized capacity utilization; two, a variety of existing processing options can be considered to meet the needs of the market (as long as issues related to cost, quality and animal welfare associated with transporting animals is addressed), without the need for major capital investment in processing capacity before it can be viable based on volume.

³¹ <http://www.nmsu.edu/~ucomm/Releases/2006/september/ranch2rail.htm>



The need for large scale processing capacity in state has been raised as a way to retain value added capacity and profits within in the state. The NMSU study cited above, however, concludes that the most efficient large operation would require the entire stock of 460,000 head in the state of New Mexico to make a processing plant economically sustainable. A smaller more economical operation would require 282,000 head, but the per head cost would be higher than other existing plants in the region. The study also concluded that while an in-state facility would reduce transportation costs to get the animals to slaughter, other transportation costs incurred for distribution to markets that are further away from New Mexico could offset those savings.

- Aging. To add taste and tenderness to a grass fed beef product, most local GFB processors dry age carcasses from 14 to 21 days. Dry aged carcasses must be trimmed, further reducing the yield of a GFB carcass. GFB producers accept this loss because it is offset by the higher quality of the product and higher premium they can capture. One constraint faced by NCM/SLV producers currently is that the USDA inspector requires the processor to take down the carcasses after only 7-8 days, as they consider the deterioration to be beyond their standards for food safety. The USDA inspector we met with told us that carcasses with more fat and marbling age better and longer due to the extra fat content, but the lean GFB carcasses “rot” more quickly. Another constraint to aging is simply space; only so many carcasses can be hanging at the processor at a time, limiting the number of cattle that can be slaughtered and aged at any one time. The cost to the processor of providing aging services includes utilization of hanging space and the cost to control the environment (equipment and energy).

The question that needs to be further explored is whether there are other ways to achieve tenderness that involve either alternative aging techniques (e.g., wet aging, which is faster) or other practices that can improve tenderness (mainly genetics). The Beef Checkoff program recently conducted a study indicating that wet aging resulted in greater tenderness and higher yields for certain cuts than dry aging.³² If demand for aging is so high and justified by the market, a business opportunity may exist for specialization within the value chain, e.g., specialized aging facilities and services that improve aging capacity, quality and safety.

Market Access. GFB producers face a range of significant market access barriers:

- Quality—tenderness and taste. By all accounts, consumers judge beef first on tenderness and second on taste—both of these are critical competitive challenges for GFB. The quality of GFB is different from what consumers are used to and requires a significant investment in consumer education to succeed. From the perspective of a consumer used to eating corn fed commodity beef, GFB looks different (little marbling); is dryer, due to lower fat content; tastes different; and needs to be prepared differently.

³² Beef Checkoff, *Working Together to Increase Beef Demand* (Research Annual Report, 2008), p. 15.



One option is to experiment with finishing diets that include a mix of feed and forage that maximize marbling, taste and tenderness, including consideration of a partial grain finishing diet that may meet the definition of “natural” but not “grass fed.” At the same time, organizations such as SWGLA can provide a valuable service for its members through public education about GFB products, so that limited producer resources can be focused on enhancing quality, productivity and marketing.

- Volume. The assumption that meeting small local orders from restaurants is achievable at lower volumes has been shown to be flawed; since restaurants generally want a lot of one cut, a weekly supply could easily overwhelm the production capacity of small individual ranchers, while leaving a significant amount of product remaining still to be marketed. Without working together and consolidating supply at some point in the value chain, local producers cannot produce the volumes needed to consistently meet demand.

As described above, many of the successful value chain models, have a significant supply base, including sources from a variety of different environmental zones, to ensure consistent volume and supply year around. The value chain entities that consolidate supply, often work through production schedules in order to meet buyer orders, which provides some degree of certainty to small producers regarding their ability to sell product at a particular time. This approach has collateral benefits. It may provide an opportunity for negotiating financing, based on orders or payment schedules. It also has benefits for small processors, as discussed above, who currently respond to customer needs on an as needed basis, but who might optimize their processing operations based on production schedules of its producer customers.

- Definitions and standards. Ironically, established standards and definitions for GFB create a competitive constraint for NCNM/SLV GFB producers. The USDA Marketing Claim Standard for Grass Fed Beef³³ will be difficult for NCNM/SLV producers to meet, because the definition of grass feed is very restrictive, disallowing any grass that has a seed head. At the same time, leaders in the grass fed beef movement, led by the American Grass-fed Association (AGA), feel that overall standard is too permissive, allowing products to be labeled “grass fed” simply by virtue of being fed the right feed, whether in feedlots or not, and without regard to production practices like use of anti-biotics or hormones to enhance growth.

The AGA therefore has established standards that exceed the USDA marketing claim standard, by also defining acceptable production practices, including “total forage diet, no confinement, no antibiotics and no added hormones.”³⁴ The AGA is currently in the process of developing a feed protocol as well, which will provide producers with some flexibility in use of feed and forage that still meet the USDA grass fed standard. The protocol is currently being reviewed, but will include a list of acceptable feeds and forages.

³³ <http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5063842>

³⁴ <http://www.americangrassfed.org/>



- Third party verification of marketing claims. Given the lack of clarity that reigns in the market, third party verification is even more important than before for legitimizing claims regarding production practices, health and nutrition, animal welfare, and environmental sustainability. Moreover, third party verification is often required by major buyers to become a vender. As we concluded from the existing value chain models, almost all the programs have some kind of partnership with an organization such as the Food Alliance or the American Heart Association to lend credibility to marketing claims or to oversee and audit the integrity of their brand and label.
- Traceability. Federal regulations mandate a system for tracking animals from birth in order to enhance traceability of disease in cattle. Many states are making efforts to help producers meet those requirements by adopting information technologies (IT) to create an electronic traceability system. Not only does traceability help producers to meet food safety regulations, it can be tied into branding and marketing to create significant competitive advantages. Exploration of this constraint merits more attention, as it requires a substantial investment, but models exists such as in South Dakota (<http://www.southdakotacertifiedbeef.com/>). Affordability and telecommunications infrastructure are probably the two biggest obstacles to utilization of IT services by ranchers. This may be a case where an industry association can facilitate access to more affordable commercial services on a group basis.
- Lack of specialized marketing services—“Ranchers don’t have time to market.” The gap in marketing services is a critical constraint to development of GFB as a value chain. As discussed above this can be solved when key players in the value chain take on the risk of organizing and assisting other producers to respond to a specific market opportunity. Our assessment identified local leadership and initiative emerging in several ways that provide a basis for developing a viable commercial value chain in NCNM/SVL. The most promising is a key player who is interested in serving as a core producer, that would take ownership of cattle, paying a premium to producers, in order to winter, finish, process and market the product. To facilitate this initiative, interventions should focus on providing the key player with technical assistance in establishing a partnership with a key buyer and leveraging Extension service capabilities to help participating producers meet the requirements and standards to supply the key buyer.
- Diversification: “Don’t niche yourself into a corner.” This Yogi Berra-ish comment was made by a producer in NCNM/SLV, referring to the singular focus on grass fed beef and the practical need for diverse sources of income. In this case, the producer was discussing agricultural tourism as an additional source of on-farm income. We also found that most ranchers finishing on grass generally rely on other revenue streams, especially off-farm revenue, as well as continuing to sell to the commodity market, to be able to manage cash flow. This is reinforced by the experience of successful marketers of natural or GFB who offer a line of products, in addition to beef.



Given the competitive challenges of achieving a profitable grass fed product in NCNM/SLV, the case for looking at a “line” of products based on a “natural” grass fed standard, that includes but is not limited to a pure grass fed/grass finished beef product as the premier high end product, has some merit. Identifying a range of products in demand by the market, at different levels and standards of production, as well as price levels, which are profitable to produce, gives regional producers flexibility to determine their production objectives, while still being able to participate in the value added opportunities. As discussed above, consideration should be given to participation in existing natural value chains, as it would provide access to markets, technical assistance, and knowledge of markets, breeding, feed and standards that would improve quality and competitiveness of local product.

- Cold Chain. Because the highest premium markets are fresh, cold chain is a critical factor in competitiveness and access to markets. The local processors have no fresh storage capacity, so producers must pick up product as soon as it is cut and the USDA inspector is present. The development of a viable cold chain, however, will be dependent on success in accessing markets and growing volume.

Supporting Markets/Input Supply. The two most important inputs to grass fed beef are feed and seed. A number of constraints exist to optimizing these inputs for ranchers. Other constraints revolved around the absence of or affordability of critical supporting services that would enhance the productivity and competitiveness of local products, and which represent potential commercial opportunities for entrepreneurs, value added services by an industry association such as SWGLA, or cooperative extension programs.

- Feed. Many ranchers grow their own feed or forage on public lands. For wintering, ranchers buy supplemental hay or forage from specialized local hay growers who sell to the beef and dairy markets. Hay growers, of course, are subject to the same environmental risks as ranchers, including weather and soil sustainability. They are particularly hard hit by increasing diesel prices due to reliance on diesel powered equipment.³⁵ According to one hay producer, customers generally look at the color, type of hay, whether it is a native grass and its nutritional value, but still buy the cheapest that is available.

According to the NMSU study referenced above, in order to improve access to grass and forage, ranchers “may need to (1) increase available grazing land, (2) increase efficiency of grazing land or supplemental forage fed, or (3) decrease the cowherd numbers,”³⁶ all of which are limited options. We found that individual ranchers have experimented with different grasses to increase efficiency and achieve better weight gain, tenderness, taste and nutritional value, but there is no consensus on what works best, nor is there any scientific data to verify their anecdotal experience. And while a substantial amount of research is available on the types of grass feed

³⁵ One producer estimated that diesel cost him about \$1100 per field.

³⁶ Dr. Terry Crawford, Ph.D., Dr. Jerry M. Hawkes, Ph.D., and Ryan D. McConnaughey, *Adding Value to the New Mexico Beef Industry*, Draft Report (New Mexico State University, July 2008). p 34.



that are best for producing grass fed beef, no research has been conducted in the context of the NCNM/SLV eco-system, a constraint that will be addressed by the proposed NMSU Extension research program discussed above.

- Land and water. Assuming the current level of 460,000 head is the maximum sustainable herd level based on available grazing land in New Mexico, as proposed by the NMSU study cited above, expanding grazing land is not an option. The rising cost of land and restrictions on use of public lands for pasturing also limits the sector to current utilization. Climate change may become a further constraint to the sector over time, reducing water supply as demand increases. Irrigation is a solution in other areas of the country, where, even with higher cost, ranchers still have been able to earn a better margin than the conventional market due to increased productivity and the premium garnered. Despite the fact that drip irrigation is known to be three times more efficient than the acequia system, financial and cultural obstacles remain to adopting the technology.
- Seed. Again, individual ranchers have experimented with their own herds to identify which breeds finish best on grass. Regardless, there is little consensus or scientific or genetic data available to support claims, though there is consensus that smaller British breeds work best on a grass diet. Again, the proposed NMSU extension research will play a critical role in helping ranchers optimize genetics and herd management to compete in higher value markets.
- Artificial Insemination (A.I.). A.I. may become more important as an option for improving genetics, as testing yields information about the best breeds for finishing on grass. NMSU extension has infrastructure to support a renewed A.I. program, if necessary, to help producers understand the benefits of A.I. and provide technical assistance and training to help them incorporate it into their production practices.
- Ultrasound services. Lack of access to affordable ultrasound services is a constraint to the competitiveness of local product. Solutions to increasing access to ultrasound services needs further investigation, either through commercial provision, extension services, or industry associations.
- Shipping. An opportunity exists for organizations such as SWGLA to enhance its services to members by establishing corporate accounts with Fedex and UPS that give members access to group and small business discounts.
- Transportation/Cold Chain. Solutions to the lack of transportation and cold chain services will emerge when volume is large enough to justify investment. Better and more timely data about growth and opportunity in the GFB value chain, and the agriculture sector in general, will enhance understanding of this kind of agriculture-related business opportunity. Providing solutions to the data gap may be an appropriate role for the industry associations.
- Distribution. Similarly, emergence of local distribution services will depend on growth in volume of supply and local demand, and on opportunity in other agriculture sectors as well. A commercial solution to this constraint, will be enhanced by better



and more timely data about growth and opportunity in the GFB value chain, and in the agriculture sector in general.

- Third Party Certification. Achieving third party certifications, or even achieving the private certifications required to supply specific buyers (such as Wholefoods), is expensive and time consuming. There is an opportunity for commercial provision of specialized training and technical assistance services, if demand for certifications grows. Again, group access to commercial services could be facilitated by an industry association.
- Graphic design services. This is not a major constraint and could be addressed simply by making producers aware of the importance of effective labeling and packaging, and providing access to services, either through directories, or again, through member based discounted group access.

Organization and Management. As discussed above, collaboration among producers and among other members of the value chain is critical to success in capturing the grass fed beef market. In a sector characterized by a large number of independently operating small ranches, this remains one of the most daunting challenge. Past efforts to promote market access have focused around organizing producers into LLCs, but have been unsuccessful for a variety of reasons.

One of the key constraints has been the assumption that LLCs are the best way to consolidate supply, retain ownership, sell the “story”, and garner a larger share of the final price of the product on the retail market. Past efforts have focused enormous effort on trying to get producers to agree to participate and in developing the ownership structure, before the market is even developed. As demonstrated above, alternatives exist for fostering collaboration within the value chain that are driven by achieving market standards of quality and competitiveness, economies of scale and specialization within the value chain. This requires a reorientation of value chain organizational efforts toward responding to the market rather than to the needs of producers.

To do so, however, requires a change in mentality about the role of “middlemen” and the value of intermediary services, based on better understanding of the real costs and benefits of maintaining ownership and doing everything independently. Our research indicates, for example, that most ranchers do not account for the true cost of marketing and, therefore, do not know their true margins.

As demonstrated in the lessons learned section above, specialized brokering services within the value chain in areas that provide economies of scale and consolidation of supply, can greatly reduce the costs to producers while increasing the chances of accessing markets and earning margins due to increased quality and volume. These models also demonstrate how the “story” of the producer, and their relationship to end consumers, can be maintained through collaboration with marketing entities and large buyers. The decision about whether to work with an intermediary, therefore, should be driven by the potential margins that can be gained. Trust, however, remains critically important, and can be achieved by better understanding of the business models of the



intermediaries—or specialized value chain goods and service providers—who serve to integrate and optimize the value chain.

Finance. The key constraint we identified related to financing was lack of financial instruments that provide credit during the gap between when expenses are incurred and revenue is realized, which can be as long as two years when raising GFB. One of the potential benefits of working as a supplier to an established value chain, however, is that production can be planned based on buy plans of the customer. Also, the long term relationship with the value chain buyer provides more stability to the producer. Both of these value chain benefits can be leveraged in applying for working capital credit, using orders or production and payment schedules to reduce the risk for lenders.

Without financing, it will be difficult for producers and other value chain stakeholders to implement the practices needed to produce for and compete in higher value markets. Incorporating financial institutions as value chain stakeholders and providing technical assistance to develop products tailored to the needs of ranchers should be a top priority for value chain development.

Policy and Regulatory. There are a range of important policy and regulatory issues that affect the growth and competitiveness of the sector, the most critical being the increasing limitations on access to public lands for grazing, upon which the New Mexico beef industry is highly dependent. Of the 78 million acres of land in New Mexico, it is estimated that 66 million could be grazed; however, only 34 million is privately owned and ranchers are highly dependent on access to public lands.³⁷ While addressing this issue is not within the scope of this report, it is worth noting that a strong and well coordinated value chain that can demonstrate viability in new markets that value environmental sustainability and land stewardship, may be in a position to advocate for more favorable regulations.

Another issue worth mentioning in the context of value chain development are the opportunities that may open up with the Farm Bill, which lifts restrictions on interstate trade, provides financing for a Rural Entrepreneur Program (\$50,000 low cost loans to establish small businesses in rural areas), and establishes the Rural Collaborative Investment Program to aid in developing new collaborative economic development strategies

TABLE 6: Summary of GFB Constraints and Opportunities

Category	Constraints	Opportunities
Technological/Product Development	<ul style="list-style-type: none"> Getting cattle to weight on grass profitably Risks of Wintering Costs of Finishing Access to Processing Risks of Aging 	<ul style="list-style-type: none"> Develop budgeting tools to help ranchers identify costs and improve profitability Develop alliance of suppliers from different environmental zones NMSU research on breeds and feed through a modified Ranch to

³⁷ Ibid.



Category	Constraints	Opportunities
		<ul style="list-style-type: none"> Rail program Explore processing options based on existing value chain models Explore specialized aging facilities Participate in existing value chain models that have addressed all these constraints
Market Access	<ul style="list-style-type: none"> Achieving quality—tenderness and taste Achieving volume Confusing definitions and standards Lack of Third party verification Need for traceability solutions Lack of specialized marketing services Need to diversify Lack of cold chain services 	<ul style="list-style-type: none"> Consumer education Develop alliance of suppliers from different environmental zones Establish minimum state standards for beef products, including health, animal welfare, and environmental sustainability, supported by a third party verification and traceability program Identify “key players” in the value chain to consolidate and market supply Develop a line of natural products that respond to different market segments, from super premium to premium Data and analysis of growth and opportunity in the GFB and agriculture sector to promote investment in specialized goods and services
Private Sector Supporting Services	<ul style="list-style-type: none"> Feed Seed stock Access to grazing land and water Artificial insemination Ultrasound services Shipping Transportation/cold chain Distribution Third party certification Graphic design services 	<ul style="list-style-type: none"> Identification of optimum feed for grass feeding Identification of optimum breeds for grass feeding Advocacy Value chain market research to identify commercial opportunities for specialized services Bulk discounts for services Directory of specialized services
Organization and Management	<ul style="list-style-type: none"> Focus on ownerships models 	<ul style="list-style-type: none"> Promote value chain collaboration based on market opportunity rather than ownership Promote understanding of true costs and economies of scale within the value chain
Finance	<ul style="list-style-type: none"> Access to credit 	<ul style="list-style-type: none"> Partnerships with financial institutions to develop structure financial instruments tailored to value chain needs
Policy/Regulatory	<ul style="list-style-type: none"> Access to public lands for 	<ul style="list-style-type: none"> Advocacy



Category	Constraints	Opportunities
	grazing	<ul style="list-style-type: none"> Implementation of Farm Bill opportunities

8 FINDINGS AND RECOMMENDATIONS

8.1 Key Findings and Strategic Recommendations

The key finding of the value chain analysis is that the competitive constraints facing NCNM/SLV will make it difficult for most ranchers in the region to produce a commercial grass fed/grass finished product that is a) competitive with current natural/grain finished and grass fed/grass finished beef suppliers in terms of quality and price, even in the local market, and that b) is profitable for producers. The main challenge is the cost of production and lower productivity due to the environmental context of the region. Current economic conditions affecting both consumer behavior and production costs, are not favorable to either of these factors.

The pure grass fed/grass finished product is the ideal that has been the aim of recent efforts. And while there is a market for this product, it is only one market segment within the specialty beef market. Where opportunity exists is in developing a “line” of natural grass fed products that respond to different segments of the market based on different sets of standards, that allow producers to chose the production practice that are most profitable for them. The challenge is articulating the standards and verifying compliance to differentiate the product in the market and to create consumer confidence in its integrity.

Based on the analysis, we conclude that there are three options for NCNM/SLV producers and stakeholders:

1. Small scale direct marketing, for producers who do not want to expand beyond 10-20 animals finished each fall
2. Participate as a supplier to existing value chains, such as Country Natural Beef
3. Find a buyer serving the local/regional market who will buy the whole carcass and work with a group of producers to develop a local (New Mexico) value chain, along the lines of the partnership between Polyface Farm with Chipotle Restaurants.

In order to implement the third option, we propose the following set of strategic recommendations:

1. Develop a “line” of natural products, with GFB that meets both the USDA and AGA standards as a super-premium product with the highest premiums. Along side the super premium product, develop other beef that answer to other premium standards, and do the same with pork and poultry.



2. Establish standards for breeds and feed to improve productivity and ensure consistent quality in finished animals. Establish standards and third party verification for market claims regarding health (no anti-biotics, no hormones), environmental sustainability, animal welfare (including handling, transport, and other “quality of life” issues).
3. Develop a NM brand differentiated on the “story.”
4. Develop alliances with southern producers and producers in surrounding states to expand the supply base to include locales that can contribute to year around supply, and that improve economies of scale that allow for specialization—in finishing, processing, aging, and/or marketing—as business opportunities within the value chain.
5. Redefine “local”—Define the local market as at least a 4-hour drive time (300 mile radius) that would include Santa Fe and Albuquerque—markets that are critical to the sustainability of any value added agriculture product in the state—and still garner the “local premium.” Further position the New Mexico brand and product line for export from our immediate area.

8.2 Review of Assumptions

Before discussing the proposed interventions to support the strategic recommendations, this section reviews the assumptions outlined in the introduction, to test their validity as the basis for future actions and investments:

- ***Ranchers must retain ownership as long as possible in order to capture the highest percentage of the final value of the final product.*** In fact, the longer the animal is owned, the higher are the costs of product sold. The focus should be on profits, and retained ownership does not necessarily translate into higher profit.
- ***Assumption: Other members of the value chain—processors, marketers, input suppliers—“gouge” the ranchers.*** All members of the value chain are trying to capture the same customer with the same product, to get a higher price, and to make a profit doing so. Lack of understanding of each other’s business models and the costs associated with meeting the competitive requirements of the market at each level of the value chain, have led to decisions about how to pursue the market opportunity that are based on concerns about exploitation rather than sound business strategy.

With such a small sector, characterized by a large number of small producers each producing small volumes, there is a critical need for some kind of value chain integration or supply consolidation role at the production, processing or marketing levels—in other words, the need for a middleman that can add value to the product commensurate with the cost of service.

- ***Assumption: Cooperatives do not work and are an inappropriate organizational form for Northern New Mexico Ranches.*** The cooperative corporate form has



strengths and weaknesses like any other form, and will only work in the presence of professional management, trained and focused Boards of Directors, adequate capital, a good business plan, and competent, effective partners in the value chain. These caveats apply to *all* business forms. Where concerns exist about the “one member, one vote” aspect of cooperative membership, very likely this form is not a good fit unless those concerns can be addressed to the satisfaction of members both large and small.

- **Assumption: *The only alternative to the commodity market is direct marketing.*** While many ranchers are now experimenting with direct marketing, it is difficult to evaluate the success of these ventures because: a) ranchers are not calculating true costs of marketing and therefore are not necessarily recovering their full costs at the price they are charging; b) few individual ranchers have enough beef to provide the volume and consistency of supply required by individual buyers except when selling direct to consumers/end users; and c) each rancher is marketing on his/her own, with no economies of scale. Evidence indicates that a ceiling is reached for individual direct marketing by ranchers at about 20 animals per year (fall slaughter).
- **Assumption: *Direct marketing is the only way to benefit from the “story.”*** Related to the above assumptions, there is an assumption that selling to a wholesale buyer dilutes the ability of individual ranchers to capture a higher premium based on their own story. In fact, due to the trend in consumer preferences for supporting family farms and keeping them on the land, larger retailers are promoting the stories of their producers as a marketing and branding strategy for capturing higher premiums. Wholesale, retail, and others who sell to end users are well equipped—perhaps better equipped—to “advocate” for the ranchers by telling their story.
- **Assumption: *The local market is the easiest market for small local producers to capture.*** Ironically, the local market is as competitive as the global market. The majority of the world’s beef industries are, and have traditionally been, grass fed; no other nation has developed the corn fed, industrial feedlot system of agriculture that we have in the United States. Consequently, other countries, such as Argentina, Uruguay, Australia and New Zealand, are meeting the growing demand for grass fed beef, based on well developed, commercial scale production and processing. Products from these countries can be found on menus and store shelves in Taos, much cheaper than local product, even despite transportation costs. So, in fact, local GFB producers are competing in a global market in their own backyard.
- **Assumption: *Grass fed beef is a different industry from the commodity beef industry.*** This assumption has led to the further assumption that a switch to grass fed beef means opting out of the commodity market altogether, sometimes as an ethical and moral statement. In fact, production and growth issues for commodity and grass fed beef are similar; the difference is in when and how and where finishing is done. Moreover, most producers of grass fed beef, continue to operate in the commodity market for cash flow and asset management purposes.



- **Assumption: Social and cultural goals are more important than monetary goals.** In fact, creating the conditions for sustainable livelihoods based on improving the supply response to demand, is a necessary component of sustaining of cultural and social values.
- **Assumption: A processing plant, preferably owned and operated by ranchers, is necessary to enhance opportunities for GFB and other local beef.** While processing capacity is a major bottleneck for local finishing of beef, GFB demand, regardless of plant ownership, cannot drive new capacity. There is idle processing capacity in larger plants all over the country. Economy of scale issues have a huge impact on viability of local plants (see NMSU report). The discussion of how best to balance transportation issues (costs and animal welfare) with local capacity needs, is an area where new strategies and thinking, coming from a larger scope, strategic planning process, are needed. The insignificance of ownership of the plant is made more than clear by the fact that existing, successful value chains in GFB or natural beef currently are not vertically integrated in that fashion.
- **Assumption: A successful local beef program is based on the needs and goals of the ranchers.** In fact, it is, and always will be, the market (the customers) that drives a marketing program. Identifying a market and fully understanding its needs is step one in developing a marketing program. Ranchers and others in the value chain must be ready to adapt and develop capacity to meet the needs of the market/customer.

8.3 Proposed Interventions

This section presents proposed interventions in the value chain that can provide the integration needed to access growing market opportunity. Based on value chain best practices, we identified interventions for public sector and donor consideration with the following parameters in mind, to facilitate private sector development of a specialty beef value chain in New Mexico.

- Organize around market opportunity to improve supply response to demand
- Build on what exists and grow the market as capacity grows
- Work with key players who are willing to take risk
- Facilitate commercial solutions to value chain constraints
- Foster collaboration and cooperation both horizontally and vertically within the value chain

Based on that AISD proposes the following interventions:

1. **Support NMSU extension research on feed and breeds that are optimized for the New Mexico production context.** Without this research, producers do not have the information needed to meet market requirements, regardless of other efforts. NMSU is seeking funding to support the research, but other ways to assist would involve supporting stakeholder outreach to identify ranchers willing to put animals in for testing and facilitating end user participation on the market side of the program.



2. **Implement a demonstration pilot to explore and adapt viable value chain model(s) through stakeholder collaboration, based on a key buyer(s) serving the local market (defined as within New Mexico)**

- Identify and facilitate deal(s) with a Key Buyer(s), and establish protocols for supplier participation
- Identify and facilitate a deal(s) with Key Player (e.g., core producer, marketing cooperative, or independent marketing entity) in the region
- Facilitate stakeholder participation state wide or possibly region wide, through technical assistance and training and facilitating access to commercial value chain services, including:
 - Work with NMSU extension on development and delivery of technical assistance and training to assist producers to meet quality and technical standards and requirements
 - Develop risk assessment and profit maximization tools to assist producers assess capacity to participate in value chains in different ways (possibly building on the Enterprise Budgeting model developed by the Colorado Department of Agriculture and Resource Economics in Fort Collins)
 - Facilitate access to financing for producers to upgrade production practices to participate in the value chain
 - Facilitate access to supporting services, such as A.I., ultrasound, third party certifications, and traceability solutions
- Facilitate linkage of other existing value chains segments—feed, seedstock, finishing, processing, aging, transport, cold chain, etc.
- Provide training and services in conflict resolution and mediation to enhance culture of collaboration, as a condition of participation

3. **Facilitate value chain financing by establishing an Agriculture Competitiveness Incentive Fund (ACIF). Without financing, value chain stakeholders will not be able to upgrade to compete in target markets. Commercial financial institutions, including micro financing institutions (MFIs), must be viewed, and consider themselves as, critical stakeholders in the value chain, and incorporated into stakeholder development efforts to enhance understanding of the market opportunity and strategy for capturing it. Access to financing for producers will also provide an incentive to buyer to participate.**

A financial consultant, with a specialization in agriculture and agribusiness finance, should be retained to design and assess the feasibility of a fund aimed at incentivizing private sector investment in the beef and other agriculture value chains. The consultant will explore the development of structured financial products, which are designed to mitigate risk and utilize alternatives to traditional collateral, including consideration of:

- Loan and loan portfolio guarantees
- Lease financing
- Factoring



The ACIF is focused on leveraging private sector investment. To the extent that grants are contemplated, they should be limited to that objective, supporting such things as market research, feasibility studies, business planning or incentives for participation in NMSU research.

4. **Continue value chain research into the feasibility of developing specialized private sector value chain services by examining both national and international value chains.**
5. **Support creation of a third party verification program to establish minimum state standards for beef products, including health, animal welfare, and environmental sustainability.** As part of this effort, explore the potential for affordable information technologies to enhance the efficiency of verification systems and improve competitiveness of the sector.
6. **Develop an on-going market intelligence function.** Given the limited scope of this effort, and the rapidly changing economic conditions as well as consumer awareness and purchasing patterns, on-going market research is needed to inform value chain stakeholders. An opportunity exists for industry associations to explore partnerships, or cooperation of some form, with LANS' NNM CONNECT program, which is in the process of designing a market intelligence service that provides local businesses access to sophisticated market information and analysis as well as GIS capability.
7. **Document the "story" of New Mexico ranching through "oral histories," in support of cultural preservation and brand development.** A unique opportunity exists to leverage the Storycorps (www.storycorps.net) project to record oral histories of local senior ranchers. "The mission of StoryCorps is to honor and celebrate one another's lives through listening. We accomplish this by providing access both to the StoryCorps interview experience and to the content that emerges from these interviews." Storycorps has a mobile recording studio that travels all over the United States to reach communities that might not otherwise be able to participate by partnering with local public radio stations and community organizations to reach local communities. Audio interviews are recorded and preserved and archived at the Library of Congress. Besides preserving the oral histories and traditions of our local ranching sector, the information from the recordings can be used to develop a "story" and brand for NM natural and grass fed beef, and as content for a supporting website, linked to the Library of Congress. This would represent a completely original branding concept.

A grant would pay for transporting interviewees to the location of the mobile studio, paying an interviewer to guide the interviews, which could be conducted by the children and grandchildren of the ranchers, based on an interview guide that solicits key information and anecdotes. Each interview takes 40 minutes, followed by a photo of the interviewer and interviewee. The interviewee immediately receives a CD-ROM with the recording of the interview, and later receives a certificate in the mail providing the Library of Congress record number



for locating the interview in the archives. A partnership between Storycorps and KRZA 88.7 in Alamosa could be explored to bring the mobile recording studio to our region to implement this activity.



ANNEX A: 2002 Agriculture Census NM County: Number of Beef Cattle Ranches by Herd Size

County	1-9	10-19	20-49	50-99	100-199	200-499	500 or more	Total
Los Alamos	2	0	0	0	0	0	0	2
Mora	65	68	76	22	16	6	15	268
Rio Arriba	89	92	131	56	24	18	2	412
San Juan	88	70	56	29	12	6	4	265
San Miguel	99	84	86	38	27	14	15	363
Sandoval	33	42	37	15	7	16	1	151
Santa Fe	62	29	27	11	9	5	4	147
Taos	71	67	43	12	5	2	1	201



ANNEX B: 1975-2008 Basic Inventory

Year	Rio Arriba	Taos	State
1975	18900	4900	714000
1976	16900	4900	644000
1977	16800	4900	642000
1978	15900	4700	617000
1979	14900	4700	597000
1980	14900	4700	626000
1981	20000	4700	551000
1982	22500	4700	565000
1983	22000	4500	592000
1984	22000	4500	578000
1985	21500	4000	555000
1986	22000	4000	542000
1987	21500	4000	529000
1988	21500	4000	527000
1989	23000	5000	577000
1990	23000	5000	589000
1991	23000	5000	571000
1992	21000	4000	539000
1993	22000	5000	567000
1994	22000	5000	570000
1995	18000	4000	560000
1996	16000	4000	565000
1997	16000	4000	573000
1998	16000	4000	564000
1999	15500	4000	572000
2000	15000	4000	564000
2001	15000	4000	549000
2002	15000	4000	500000
2003	14000	3000	466000
2004	14000	3000	455000
2005	15000	3000	472000
2006	13000	3000	460000
2007	12000	2000	440000
2008	12000	2000	460000



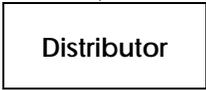
ANNEX C: CORE PRODUCER VALUE CHAIN MAP

VC
Segments

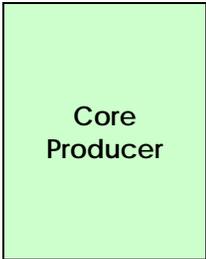
Retail



Wholesale



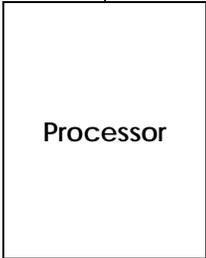
Marketing/
Distribution



Cut & Wrap



Aging



Harvest



Finishing



Cow/Calf



Input
Supply



MARKETING COOPERATION/COUNTRY NATURAL BEEF CHAIN MAP

VC Segments

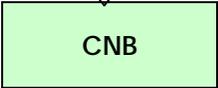
Supporting Services

Retail

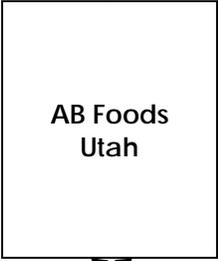


Wholesale

Marketing/
Distribution



Cut & Wrap****



Harvest

Finishing***



Trucking Contractors

Cow/Calf



Trucking
Contractors**

Food Alliance
inspection*

Input Supply



*New members must pass an inspection by the Food Alliance, upon joining, then every 3 years thereafter.

**CNB has developed long term relationships with truckers who work under contract. They are trained in humane handling procedures established by CNB.

***Independent finishing lot, approved by CNB. Ranchers are responsible for getting their animals to the lot and feeding and finishing them.



***CNB does not age it's meat. It is cut into primals and cryovac'd. Most of their customers do their own aging.



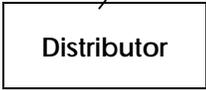
INDEPENDENT MARKETER VALUE CHAIN MAP

VC
Segments

Retail



Wholesale



Marketing/
Distribution

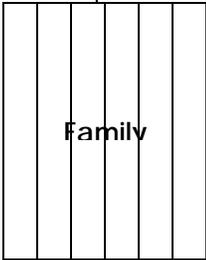


Cut & Wrap



Aging

Harvest



Finishing

Cow/Calf

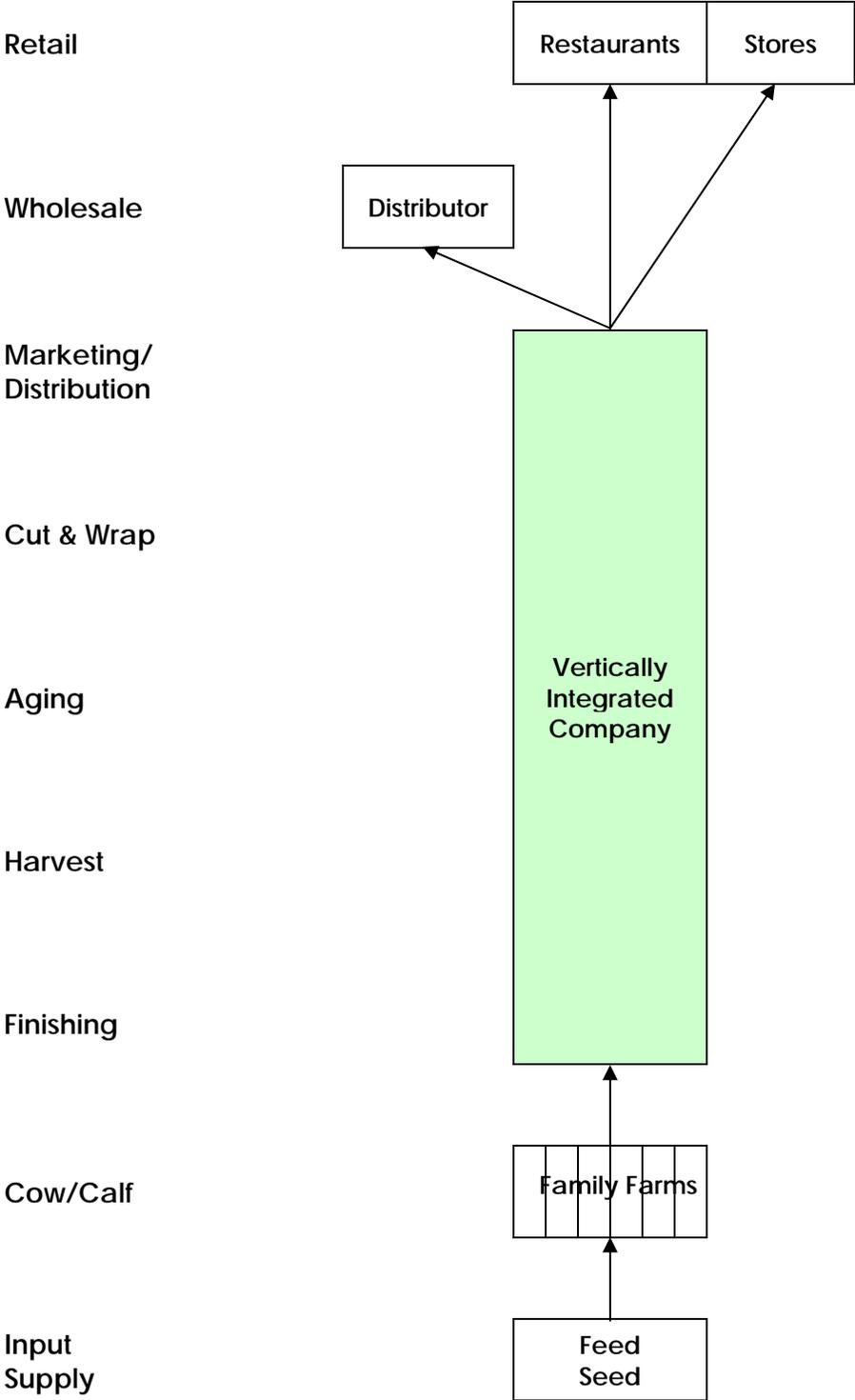


Input
Supply



VERTICALLY INTEGRATED COMPANY VALUE CHAIN MAP

VC
Segments



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