

**A VALUE CHAIN APPROACH TO DEVELOPING A VALUE-ADDED  
BEEF BRANDING PROGRAM IN NEW MEXICO  
FY 2009**

Buyers of beef, from food service to retail to end consumer, have clearly stated a preference and desire for access to local/New Mexico beef, but these products are not available for the full range of buyers who want them. The goal of the project was to foster the development of one or more New Mexico beef value chains to begin to meet the demand. Value Chain #1 was based around a four-store independent retailer with a secondary distribution business, whereas, Value Chain #2 was geared toward restaurants and based around a major food service distributor. The two value chains are different in many respects and provide a valuable opportunity to compare and contrast. The report presents the story of both value chains, focusing on the approach taken to accomplish project objectives, the contributions of project partners, and the gains seen by beneficiaries of the project. Additional analyses cover the current status of the beef industry in New Mexico, and major challenges and opportunities in the market.

**FINAL REPORT**

**VALUE CHAIN ANALYSIS**

**IMPROVING OPPORTUNITY IN NEW MEXICO BEEF VALUE CHAINS**

**CHALLENGES AND OPPORTUNITIES: A REPORT ON THE NEW MEXICO MEAT  
PROCESSING INDUSTRY**

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# A Value Chain Approach to Developing a Value-Added New Mexico / Local Branded Beef Program in New Mexico



## *Final Report*

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## Background

Buyers of beef, from food service to retail to end consumer, have clearly stated a preference and desire for access to local/New Mexico beef. This preference reflects their desire to support local business (especially local/New Mexico ranches) and the belief that shorter supply chains (less food miles) mean fresher and safer products. They really want to know where their food is coming from.

The question has arisen repeatedly as to why New Mexico beef is not available for the full range of buyers who want it. This value chain (VC) project was conceived with the goal of fostering the development of one or more New Mexico beef value chains. Through the development and implementation process, it would then be possible to assess whether additional value/opportunity is created for New Mexico ranchers and other beef industry players.

The value chain approach includes the premise that all players in the chain receive a fair and equitable profit/return for their efforts. Generally speaking, all costs and risks are pushed back toward the farm/ranch gate and are squeezed accordingly. Therefore, a key goal of the beef value chain is to develop and return a premium to ranchers, rather than moving economic benefits further out the chain to the middlemen and end sellers.

## Objectives / Work Plan

Beginning in 2009, a series of interviews were conducted to find buyers interested in developing a value chain that would return opportunity to the ranchers and allow end customers to choose New Mexico beef.

We were successful in identifying two buyers committed to developing local/New Mexico beef value chains. Value Chain #1 is based around a four-store independent retailer with a secondary distribution business. Value Chain #2 is geared toward restaurants and based around a major food service distributor. The two value chains are different in many respects and provide a valuable opportunity to compare and contrast. Both are still operational today and are optimistically going forward. In each case, experience is leading to constant refinement and change.

*Because early research on the project suggested that efforts should be split across two value chains, this report is written in such a way as to focus on each value chain separately. The report will present the story of both value chains, each focusing on the approach taken to accomplish project objectives; the contributions of project partners; and the gains seen by beneficiaries of the project.*

## Value Chain #1: Grass-finished beef for local, independent retail and distribution

The local retailer has featured local, grass-finished, and organic beef since 2005. Two individual ranches had been the vendors for this retailer. Each one failed in business as year-round grass-finished beef suppliers. In contrast to ongoing store-wide sales growth, sales of beef in the retail stores had been flat for years. When the second ranch withdrew as a supplier in March 2010, the retailer decided that it did not want to contract with a single producer to fill its needs, nor did it want to manage multiple supply streams. It decided to embrace the value chain approach and reached out initially to a producer who had been trained in and was equally committed to that method. The producer in turn engaged six other producers in an associative process that eventually led to the formation of a co-operative.

The producers who formed Sweetgrass COOP are small producers, with under 200 mother cows. Several are committed to organic/grass finished production, though that is not a requirement of membership. One member provides finishing services, and does not own their own herd. Most are multi-generation ranches.

The producer co-op has taken responsibility for production planning and quality assurance. In order to meet those requirements, the co-op initially accepted 4 members from Southern Colorado and 3 from Northern New Mexico. The founding producers agreed that in order to assure a year-round supply of consistent quality, grass-finished product (especially during a time of drought) several different climatic/production regions would need to be connected. The buyer had already embraced a "food shed" concept in which products from within a 300-mile radius of the store hub are considered "local". This regional approach was seen as a prerequisite for success in the value chain.

The producers developed a quality standard based on repeated testing of mother cows and offspring using state-of-the-art ultrasound techniques. Mother cows who themselves showed desirable tenderness and intramuscular fat characteristics comprise the foundation herds, and offspring of those mother cows were also tested during grow-out. The top-ranked animals became the "premium" beef, and a second tier of stock was also identified and sold for a lesser price wherever possible. Also a cull cow program designed to promote grass-finished ground beef was developed.

A small USDA-inspected custom processor was identified closest to 5 of the 7 members. This processor had been approached several times by different grass-finished producers and even a producer group, but had never seen any group follow through on its commitments. To remedy problems of trust and confidence, the buyer became the primary point of contact for the processor and handled scheduling of harvest and dry age (hang times). All bills from the processor are made out to the buyer. BII-NM also made frequent contact with the processor to be sure lines of communication were kept clear. The processor had typically emphasized game processing for most of fall and early winter, and this loomed as a potential future challenge as the value chain effort began in Spring 2010.

The buyer had been purchasing entire carcasses from the original two ranches, and continued that practice with the producer co-op. The initial orders were for nine cattle every four weeks, broken into alternating harvests of four and five every two weeks. Initial pricing to the producers was \$2.35/lb. and was raised to \$2.55/lb. hanging weight for premium carcasses. The buyer worked with the producer co-op, providing assistance with the development of marketing material. The two groups met quarterly to address broader emerging issues and to plan for the following three to six months.

These meetings led to the realization that the second tier of "value" animals needed to be added into the sales process in order to increase returns to the producer co-op members. These cattle were culled from the premium herd because they did not meet ultrasound requirements but were still highly rated. The buyer initiated a ground beef program aimed at smaller food service buyers who had a preference for locally produced ingredients. The processor was able to pull some high-quality cuts from value animals, which in turn added value for the buyer and helped begin the process of reducing costs for the program. Initially, producers were paid \$2.17/lb. hanging weight for the value animals. Later the price was reduced to \$2.00 and finally stabilized at \$1.85. All parties agree that the current pricing is fair to all involved and hopefully will help build volume.

Initially, the buyer carried forward retail pricing inherited from the previous two ranch relationships. Sales grew as a result of several circumstances: the buyer began working with pricing; the buyer started distributing beef among the stores, to another coop retail, and an initial group of 6 to 8 small food service buyers; and the producer became increasingly effective at meeting its internal grading standards. The processor adjusted some game processing schedules during the first fall in order to avoid interruption in the supply and consistency of product delivered to the buyer. By January 2011, the buyer had increased the order to 12 premium animals every four weeks.

In Spring 2011, it became clear that lower prices would be needed in order to drive more sales of products derived from value animals. This led to discussions about ways to reduce costs in processing, as well. In addition, a value-added product line was being developed. In Fall 2011, the hanging weight price for value animals was reduced to \$1.85. As of that time sales of value animals had increased to four animals every four weeks.

In order to achieve greater economies of scale with the value line and to add flexibility to the program, a search is on to identify a second, higher volume processor. Ideally, that processor can handle a larger number of value animals at a time, is geared for larger scale production of ground beef and patties, and has ample freezer space to temporarily hold finished product. Facing high culling rates due to the drought in Fall 2011, the producer co-op has asked the buyer to consider buying a larger amount of value animals. The leading candidate for taking over the processing of volume loads of value animals is located in an area where conditions are favorable to maintaining (and gaining) weight in winter. A possible location for holding and "reconditioning" the cattle after transport, also allowing the harvest schedule to be spread out, has been identified. The possibility of buying a full truckload of value animals,

pasturing/feeding them near the processing plant, and processing them over a more extended period is under consideration. The goal is to hold the producer's price for culled and value animals, while gaining cost advantage through the new processing relationship.

Throughout the process of establishing the grass-finished beef value chain, the buyer has taken responsibility for the overall success of the enterprise, which would not be possible if all players in the chain were not clear about their needs, willing to work together, and expected to deliver on their commitments. Through this series of relationships, the processor has come to value the consistent orders (and payments) generated by this program, and has scaled back fall game harvesting to allow for minimum disruption of the process of the value chain. The producer co-op continues the difficult work of organizational development, increasing membership, and growing its own business. Many members also sell to another grass-finished beef buyer, but the co-op as a whole has retained a commitment to supply the value chain first. The buyer continues to see expansion of sales and good margins within its meat departments. Beef sales have risen as a percentage of department sales from 13 percent in March 2010, to 23 percent in Fall 2011. Increasing demand for the grass-finished ground beef from small food service buyers is also noted. The new target price of \$3.65 for 5 lbs. ground beef is expected to keep driving sales upward.

All of the value chain partners look forward to continued growth and profits to all players in the chain.

### *Value Chain #2: Local/regional beef for food service and retail distribution*

The local division of a national food service distributor has long been unable to meet buyer request for a year-round supply of high-quality local beef. The distributor determined that emerging technologies to support age and source verification provided a framework for the development of a local beef supply. In order to pursue that goal, it engaged a company that was developing a brand of beef based on age and source verification. The basis of the brand was that the beef cows were born and raised to weaning in New Mexico, finished wherever it made sense, and processed at a large-scale facility in the Texas Panhandle.

The New Mexico Department of Agriculture helped the buyer for the branded beef company identify sources of cattle that met the buyer's quality requirements. The buyer offered a premium of \$35-\$70 (current source- and age-verified premiums) for cattle that met its quality requirements. The program was launched in June 2010 with 40 cattle per week and grew to an average of 60 head processed weekly. Outreach from the buyer to cattle producers was supported by NMDA, and the buyer presented their program to over four hundred ranchers at the New Mexico Joint Stockman's Convention in December 2010. The branded beef company handled purchase of cattle, payment of feedyards, transportation services, and processing. The distributor took ownership of all finished product. The program was a choice and higher program due to cooler space. Finished product was competitively priced when the grade out was there. When choice grade was not attained, prices dramatically increased. There were no penalties towards the producer for product that did not grade well.

During the winter of 2010-2011, there were gaps in which cattle born and raised in New Mexico could not be located that met the quality requirements. There were a total of five weeks (in January and February) that the distributor had to do without a weekly harvest.

As with many other programs, carcass utilization was an ongoing challenge. The distributor began to develop further processed items like beef fritters, hamburger patties, portion-control steaks, fajitas, roast beef, pastrami, and corned beef in an effort to utilize the whole carcass. The development of further processed items went very well. Hot dogs produced from program ingredients received high acclaim during taste testing at the New Mexico State Fair in September 2011. The emphasis on further processed products was necessitated by the absence of a large retail buyer/partner. Historically the retail market segment purchases different muscle cuts than food service and is better able to absorb a variety of items.

The branded beef company invested in another processing plant unrelated to the local New Mexico initiative. By Spring 2011, it was clear that the branded beef company was not going to be able to keep the project going without purchase guarantees for their new plant. They placed requirements on the distributor to support the new plant that could not be met to the satisfaction of both parties. The distributor withdrew its support from the program.

The distributor then reached an agreement with three larger New Mexico producers to purchase "natural" ("never ever" treated with hormones or antibiotics) cattle directly from the producers and to have those cattle processed at the same plant where the first branded beef product had been processed. The distributor believed that by combining local and natural, a smaller but more loyal market could be developed. A third-party verification program was implemented to certify age, source, and "Never Ever" treated status of cattle. (*This is the same program followed by producers wishing to enter the export market and meet European Union (EU) requirements*). In order to assure supply for this market, the distributor offered a premium of \$140 per beef for cattle that met its quality requirements. Brand remained choice and higher with no producer penalties for a bad grade. In this iteration of the value chain, the distributor bought the cattle and paid the processor. In addition, any items that the distributor could not use or cattle that did not grade were sold by the processor through a different supply chain as a "stop-loss" measure. Items sold outside of the distributor's own system resulted in loss of value, as they were not made at premium prices. An additional value-added product was also developed by the distributor.

The distributor ran into the same gap in sales that it identified in the previous chain of relationships: absent a retail buyer with whom food service demand could be balanced, and for whom there was premium value in the program, losses were unavoidable. While processing between 40 and 80 cattle per week, the distributor was losing \$5,000-\$10,000 per week.

In Fall 2011, the distributor determined that it could not financially support this program any longer and offered control and management of it to the Processor. The Processor believes that it can engage a retail partner. To help do so, it has defined "local" as any beef animal that

spent 100 days of its life on a New Mexico ranch. The distributor retains the exclusive right to sell the product in the food service sector. The distributor purchases only the products and quantities of product that it needs and is not at risk for further loss in the program. The distributor is seeing growth in the program again because it is local and affordable.

The processor is establishing relationships with different feeders as needed (so far two have been engaged) who will buy the cattle. Verification as 100+ days in New Mexico occurs through a source-verification document signed by the rancher or cattle owner. The feeder is paid a premium of \$30 per head for cattle meeting the processor's quality requirements and being source verified as 100+ days in New Mexico. It is at the feeder's discretion to pay a premium to the rancher or cattle owner for whom this is otherwise a market-priced sale. The definition of "local" as 100+ days in New Mexico allows cattle purchased from outside of the state but fed at a New Mexico feeding facility, to also qualify. This assures that there will be no gap in the continuous, year-round supply of consistent quality cattle. Using this definition, the processor is committed to a regional program with a local/New Mexico focus.

Under the current definition and the management of the processor, the program is harvesting between 80 and 120 cattle per week, all from a single feeder at a given time.

The distributor and processor are confident that with the definition of "local" set at a minimal level, the program will pay for itself and also provide a foundation that will support the marketing of more differentiated, value-added local beef. This is agreed on as a key point in evaluation of sustainability of local beef marketing: the program has to cover its costs for all players. Additional value-added opportunities can be built up from there.

*Note: The branded beef company that led the purchasing and branding of this value chain has remained active in New Mexico and is working now with the local division of a different national food service distributor. For purposes of this report, the decision was made to focus on the initial two value chains, as the third value chain is too new and sufficient data has not been gathered for a complete analysis. However, as a result of this project, NMDA and its industry partners will continue to help grow this program and others.*

## Results / Conclusions

A comparison of Value Chain 1 (VC1) and 2 (VC2) and lessons learned:

Buyer involvement: VC1 and VC 2 were both "buyer initiated": From the start, VC1 was geared to first meet existing, proven demand. As such, it was built on a base of known costs and markets. VC2 was built in response to market potential, but without a proven history to refer to. VC2 was built to achieve a necessary volume first, in order to achieve production and distribution economies of scale. It was expected that markets would be developed to consume the volume of product that was created. VC1 was never exposed to significant price risk, but also was under no pressure to achieve certain production volumes. Thus it was able to grow into opportunities and fine-tune processes in response to markets. As VC2 developed, marketing gaps emerged. The absence of a retail partner hampered the ability of VC2 to

minimize waste and maximize value per animal. Out of necessity, VC2 had to adapt the program itself as market realities came into play. That is why we see three different program concepts that have been assessed in VC2.

**Rancher Involvement:** VC1 grew out of a direct producer-to-buyer relationship, and the producers were asked to develop product quality assurance processes to meet buyer requirements. VC2 employed an intermediary third-party verification to assure that product acquired met the desired standard. The move under VC2 toward feeder coordination is an indirect effort to develop production planning. To date, ranchers have not been involved in addressing production planning or quality issues except on a case-by-case basis. This makes it very easy to understand why the rancher premium has disappeared as VC2 has evolved. There is no way for ranchers to merit a premium unless they “earn” it by addressing production and quality issues in such a way that the end buyer receives a consistent supply of a high-quality product that meets their specifications. Larger operations have the potential to address this need/opportunity individually, while smaller ranches will only gain access to these premiums through some type of associative or co-operative process.

**Processor Involvement:** Over and over, lack of access to processing has been blamed for the inability to grow local beef value chains and for local producers to be profitable selling local beef. In both VC1 and VC2 the buyers developed solid, mutually beneficial relationships with reliable processors. Processing availability and cost have not been barriers to the growth or development of VC1 or VC2. In VC1, the processor changed his business expectations over time to accommodate the needs of the buyer. As VC1 grows and diversifies, opportunities for other processors are also being identified. In VC2, the processor was central to the business model from the outset. As VC2 evolved, the processor became more central, eventually assuming ownership and managerial control. This makes sense because the “entry level” definition of local that became the resting point for VC2 is one that is well understood by the processor. It is not a niche market; rather, it is a localized version of an industry standard product.

**BII-NM and Partner's Involvement:** BII-NM and its partners have provided objective, unbiased support for any party in any of the value chains on a proactive as well as an as needed basis. It has been essential that at different times a concerned party, with credibility among all of the Value Chain players but no actual investment, be available as a sounding board or to address a particular problem that has cropped up between links in the chain. Going forward, BII-NM and its partners will participate wherever possible in much the same way.

**Market Acceptance:** VC1 continues to steadily expand its market. VC2 has adapted its program to market demands; the current operating parameters are too new to assess how the market will respond, but all parties in the chain are optimistic. Clearly the upside for VC2 is its potential to move volumes of product. VC1 is a more narrowly defined niche and is not likely to achieve serious production volumes in the near future.

## Summary of Lessons Learned:

- Designing for a known market has less risk;
- Involving ranchers in quality management and production planning is beneficial;
- Rancher involvement is necessary if ranchers are to garner a premium; and
- Processing is not the bottleneck in growing the markets or the value chains.

## Current / Future Benefits

### Opportunities and Questions Going Forward:

VC1 represents what is currently the most narrow niche market for beef. Regardless of its future potential, local/regional grass-finished beef is at present the smallest sector. VC2 represents the largest volume potential with the least restrictive definition of local/regional.

With the two value chains established for solid growth and economic sustainability from here going forward, the question remains about additional opportunities within the enormous range of product differentiation that is possible in between the two.

Experimentation conducted in VC2 with New Mexico-born calves and with “Never Ever” treated natural beef show promise in two areas: The VC2 buyer (and likely others, as well) are interested in those products, but will not re-engage them with new financial exposure. In the initial development stages, it has been possible to identify large individual operations that could handle all of the needs of a brand developed for either of those two niche markets.

## Recommendations / Next Steps

Future pursuit of these opportunities would be desirable using a more inclusive approach, seeking opportunity for a number of ranches of a wider scale of operation. It is entirely logical that the larger the needs of a given value chain, that it will be easier for larger ranches to fill those supply needs. This is especially true during early stages when systems are being worked out and problems of growth are addressed. A more inclusive approach would add complexity but also resilience, and would involve inter- and intra-regional coordination and production planning. Some sort of rancher's association or co-operative will likely be needed in order to engage this opportunity in a way that allows ranchers to participate and earn the market premium that these two niches offer. BII-NM and its partners expect to continue to play a role in supporting the creation and development of these COOPs and associations, formal and informal. It may be necessary and wise to adopt a regional perspective: to look at production areas close to but outside of New Mexico in order to assure that a year-round supply of consistent quality product is available.

As a result of the experience and evolution of the two value chains that were encouraged with the help of the FSMIP grant and through the work of BII-NM and its partners, there are new opportunities for ranchers to market and in some cases gain a premium for their cattle. In addition, at least two opportunities have been made visible and have potential for future development. The value chain concept of buyer-centric product development will be at the

heart of any steps forward. Future products and marketing initiatives will be designed to meet the requirements of known, committed buyers. Rancher involvement will assure that premiums created will be available to them when they meet buyer expectations. Processors will continue to be valuable partners, providing the necessary skill to turn our cattle into the beef that our customers prefer. The process of identifying willing, committed buyers, understanding and meeting those buyers' requirements, is at the foundation of opportunity development for New Mexico ranches that want to benefit from the growing preference for locally/regionally produced beef. BII-NM and partners intend to continue to play an important role in identifying those buyers and helping them access the New Mexico beef that they require. In the long run, this approach to production and marketing will offer value-added options for many New Mexico ranchers.

Based on the positive experience and growth of the two value chains that have emerged through the course of this project, and on the prospects for further Value Chain development to address at least two other market segments, it is safe to say that the production of differentiated, branded beef products, geared to local and regional markets, will become increasingly valuable to a growing number of New Mexico ranches now and in the future.

### Attachments

Three additional research projects were undertaken in conjunction with the value chains that were encouraged through this project. "*Value Chain Analysis*" addresses the broad picture of New Mexico cattle industry operations and trends and was conducted by NMSU agricultural economist Dr. Jerry Hawkes. "*Improving Opportunity in New Mexico Beef Value Chains*", by Nick McCann, surveys participants in the two value chains looking at whether processing was a bottleneck impacting their development. A study of New Mexico processing capacity, by BII-NM, conducted in 2010. Finding that it was not, but clearly hearing what other challenges the buyers face, the study goes on to propose several interventions that could enhance the marketing of local/New Mexico beef. The three reports are attached as Appendices 2, 3 and 4.

## Appendix 1



The New Mexico Beef Industry Improvement Initiative (BII-NM) task force held listening sessions throughout the state and convened key industry stakeholders at two strategic planning summits. One of six tasks that came out of the first summit was to develop a branded beef program using the “value chain” framework. The FSMIP grant allowed BII-NM (through the New Mexico Beef Council) to lay the groundwork for this task.



The New Mexico Beef Council surveyed over 4,000 people at the New Mexico State Fair to gain a sense of the level of demand for New Mexico beef by local consumers. Survey results were presented to producers and potential buyers through these two marketing pieces.

## NEW MEXICO BEEF: WILL IT BE WHAT'S FOR DINNER?

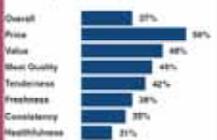
Recent market research is showing that consumers care more and more about the story behind the food they buy. While beef has traditionally been a commodity product, concerns around animal welfare, health, environment, and food safety have created a growing marketing opportunity for branded beef. Beef Industry Improvement of NM (BII-NM, a collaboration among industry organizations and state agencies) believes that New Mexico restaurants and food retailers can benefit from this opportunity by working with our state's ranchers to develop in g a New Mexico branded beef product.

### The Numbers

A national consumer study conducted by Midan Marketing found that:

- The average meat buyer recognized 6 brands of beef.
- 74% of consumers chose their supermarket because of the brands of meat available.
- 84% were willing to pay more for branded beef, 55% were willing to pay a 20% premium.

Percent of Consumers Who Believe Branded Products Buy Greater from Unbranded Products

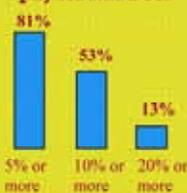


The New Mexico Beef Council surveyed over 4,000 state fair goers and...

97% of consumers would prefer to eat New Mexico beef.

80% are willing to pay a premium for NM beef.

Premiums New Mexico Consumers are willing to pay for NM Beef



As a buyer, you may wonder what your role is developing a brand of New Mexico beef. A branded product will only be viable if it can meet the needs of its buyers. BII-NM is committed to working with interested buyers to understand their needs around price, volume, cuts, quality, and other attributes. This basic information along with ongoing dialogue is most likely to create a product that adds value to both buyers and producers.



For more information, please contact Steve Warshawer at (505) 470-4607 or beefnm@gmail.com

DID YOU KNOW...

### NEW MEXICO CONSUMERS WANT NEW MEXICO BEEF

The New Mexico Beef Council surveyed over 4,000 state fair goers and...

97% of consumers would prefer to eat New Mexico beef.

80% of consumers are willing to pay more for New Mexico beef.

28% would pay 5% more  
40% would pay 10-15% more  
13% would pay 20% or more!

New Mexico ranchers produce great beef and lots of it, let's work together to bring New Mexico beef back to New Mexico.





Producers and cattle from the Grass-Finished Beef Value Chain (VC1)



Representatives from the food service distributor and beef packer were on hand to talk with New Mexico cattle producers at their annual Joint Stockman's Convention.





NMDA held the first consumer tasting of an all-New Mexico beef hotdog sold by the food service distributor in Value Chain 2. NMDA sampled the hotdogs during one of its weekend promotions at the 2011 New Mexico State Fair. They received “rave reviews” from the fairgoers.



# Value Chain Analysis



**Jerry M. Hawkes**

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September, 2011**

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## **Executive Summary**

Discovering mechanisms that facilitate the overall profitability of an industry is essential in enhancing the potential marketability of commodities such as beef products. Establishing and ultimately expanding the value chain within the beef industry as a whole is a challenging prospect on many levels. The opportunities to accomplish this task are growing with continued strengthening of the demand for locally grown and produced agricultural products nation-wide.

New Mexico beef cattle producers, processors and food industry firms have joined forces to impact the value chain for New Mexico beef products throughout the state and region. The focus of this program is to meet estimated demand for locally grown beef products that can be delivered to the local populations of the state. Food stores, restaurants, cooperatives and food service entities are included in this effort to meet the consumer demand.

In addition to expanding the value chain for New Mexico beef products through this program the financial rewards are recognizable through the receipt of premiums paid to New Mexico producers by the food service industry. These premiums are available to the producer due to the demand that the local consumer has established for these specific products. An essential component of the program is that it is available to producers of all size classes throughout the state of New Mexico. The program is also inclusive of commercial and naturally raised beef animals.

Overall projections and initial results are positive for all parties involved. Producers are able to enhance their income, consumers are able to gain access to products they desire and food service industry representatives have expanded their product line. Continued interest and dedication by the inclusive industry will be essential in long-term success of this value-chain

program directed at greater financial success for the New Mexico Beef industry as a whole. Efforts by the New Mexico Beef Industry Improvement Task Force has been an important facet in reaching out to all sectors of the industry to assist in gaining greater traction for the industry as a whole.

## **Introduction**

The process of determining the value chain in the beef industry poses an interesting set of circumstances to consider. The New Mexico Beef Industry Improvement Task Force has been actively pursuing avenues for New Mexico producers to expand on the aggregate value of beef. In the United States cattle account for nearly \$73 billion annually in cash receipts which comprise almost 32% (USDA 2010) of the total receipts attributed to agriculture. There are more than one million cattle operations in the United States; of these more than 75% have fewer than 50 head. The demographic composition of the industry provides a variance in discussing the value chain analysis that is not discovered in most other agricultural industries.

A value chain may be defined as; a process that considers the market interactions when considering market actions, the impact each factor has on the aggregate outcome while assessing incentives and competitive nature of the firm. Determining these factors has the potential to be a complex set of analysis that is difficult to ascertain. This study employs an emphasis on cost and return data for New Mexico producers and the current programs that encompass an ever changing agricultural marketing environment.

New Mexico's beef cattle industry is very representative of the national scope that exists for producers. The majority of New Mexico producers are small operators. Livestock sales comprise a large portion of cash receipts that are received by New Mexico agricultural producers on an annual basis.

In response to the growing concerns among beef producers in the state over these issues, the New Mexico Beef Council, New Mexico Economic Development Department, Cooperative Extension Service, SYSCO New Mexico, and others; along with the Agriculture Economics and Agriculture Business Department at New Mexico State University have come together to investigate various options for demonstrating the value chain process in beef cattle. This report outlines in detail the current state of the beef industry including size, trends, costs of production and overall beef demand trends. The study also discusses the feasibility of a local or regional beef branding program and the implementation of a grass fed beef program.

#### *United States*

According to the Economic Research Service of the United States Department of Agriculture, beef production is the largest segment of the U.S. agricultural economy. The USDA estimates that there were 762,880 U.S. beef cattle producers operating in 2010 with an estimated inventory of 30.3 million head. Over three-quarters (77.41%) of those operations are estimated to have between 1 and 49 head of beef cattle and hold 31.8% of the total inventory. By contrast, those operations with at least 500 head make up just 0.87% of the total operations, but account for 17.3% of the inventory of beef cows in the United States (Table 1) (Farms, Land in Farms, and Livestock Operations, February 2010). The fact that there are many small operations in existence and that there is little happening in the way of producer consolidation is due in part to the “absence of significant economies of scale,” (Lamb, 1998). In simpler terms, larger operations have little cost benefit advantage.

**Table 1: 2010 Beef Cow Estimates**

Head	Number of Operations	Percent of Total	Inventory on Operations
1-49	590,550	77.41%	31.8%
50-99	93,750	12.29%	15.6%
100-499	73,055	9.58%	35.3%
500+	5,525	0.87%	17.3%
Total	762,880	100.00%	100.0%

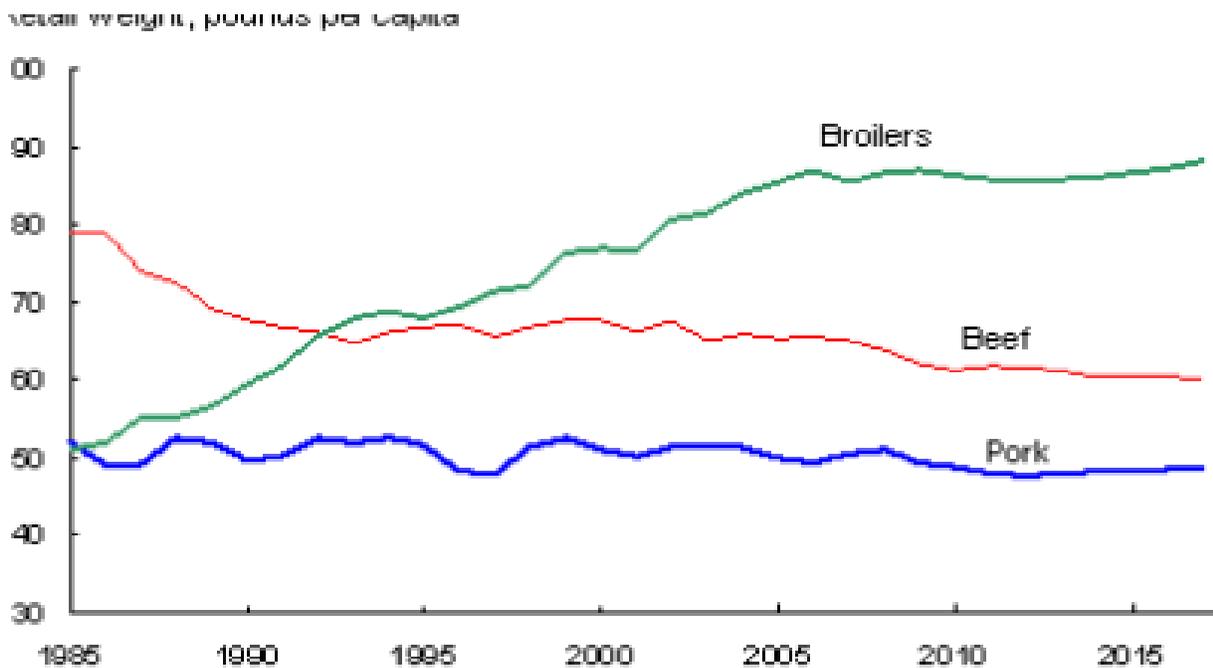
Source: USDA NASS: Farms, Land in Farms and Livestock Operations: 2010 summary

Although U.S. beef consumption has declined in the past 20 years (see Figure 1), the value of beef has increased, largely because of efforts to market beef in higher value-added products similar to pork and chicken. In 1985 the U.S. government created a marketing process directed at developing greater recognition for the beef industry as a whole. This process includes the collection of \$1 per head on all domestic and imported cattle sold in the United States. Funds from this “national check-off,” are used to promote demand for beef, through consumer advertising (e.g. the national campaign “Beef: It’s What’s for Dinner”), marketing partnerships, public relations, education, research and new-product development. The USDA is involved extensively in these check-off activities.

An example of the market structure changing relative to the beef industry and it’s perception would be; McDonald’s who in 1999 initiated the Beef Advantage Project (BAP) in partnership with a large cattle merchandiser, cattle feeding company, and meat processor— respectively, Capital Land and Livestock, Friona Industries, and Excel, which was then the third largest meat and poultry processor in the United States (Reavis, 2000). The goal was to create a more efficient, consistent and appealing product for consumers. These types of alliances are more commonly forming in the U.S. continuing to extend the beef value chain. One of the ways that the above efforts are most felt by consumers is the shift in the marketing of beef to higher

value-added products. For example, the Beef Board provides extensive resources to retailers to transform the beef offerings in the meat case to have the variety, appeal, and ready-to-cook features that have long been associated with pork and chicken. Despite declining per-capita beef consumption, U.S. consumers in 2007 spent \$75 billion on beef from supermarkets (retail) and food services, including restaurants, \$26 billion more than they did only eight years prior.. Per capita expenditures on beef and beef products in all forms increased by almost \$50 in the first half of the 2000's. Growth in this capacity is an important factor for the industry to focus on and continue to expand the relevance of their products in all capacities in the future.

Figure 1. United States Meat Consumption.



### *Financial Situation*

The operating costs of a cow-calf production operation in the United States increased by almost 10 percent between 2008 and 2010, rising from \$530.48 per bred cow to \$583.42 per bred

cow. Much of the increase can be attributed to a 14 percent increase in the cost of feed over the same period. Due to the increases in operation costs, the value of production less operating costs shrunk from \$108.71 per bred cow in 2005 to just \$27.15 in 2006 (Cow-calf production costs and returns per bred cow, 2005-2006). Overall volatility in oil prices is reflected in both costs and returns for the beef industry.

The price of feed grains often employed in the process of feeding and finishing beef animals for consumption hit all-time high levels during the early part of 2008. Finishing beef cattle using feed grains in a feedlot facility is the most cost effective manner to be used over the past 50 years (Brokken, O'Connor, & Nordblom, 1980). The New Mexico Ranch to Rail program has estimated the average cost of gain for finishing cattle to be \$0.77 per pound. Since the consumers' tastes and preferences have evolved to the point that they demand a marbled, tender beef product, the idea of pasture finishing has become less realistic. A pasture finished beef product does not have the same characteristics as those recognized in a feedlot finished animal. Currently, consumers will accept products that grades 'good,' but most prefer products that grade 'choice.'

*New Mexico:*

Beef production is a significant contributor to agriculture production in New Mexico as well. According to the costs and return estimates prepared for New Mexico livestock production, the value of production less operation costs were \$324.12 in 2011 (Hawkes & Libbin). In 2010, the production of cattle and calves contributed \$1.2 billion in cash receipts to the state's economy and ranked as the second largest contributor to the value of NM commodities, following only the expansive dairy industry. Most cattle in the state are raised on operations based in pasture or range production and shipped to one of the few feedlots in New

Mexico or to an out-of-state feedlot in for finishing. Due to the prevalence of range based production, New Mexico producers are heavily dependent on vegetation available during the growing season, an element that is highly uncertain based on numerous factors including weather patterns, management practices, and previous usage rates.

Currently the New Mexico beef industry is based primarily on cow-calf operations for the core of its production. This production basis is due to both traditions as well as land composition throughout the state. Table 2 provides the demographic profile of the land ownership pattern throughout New Mexico.

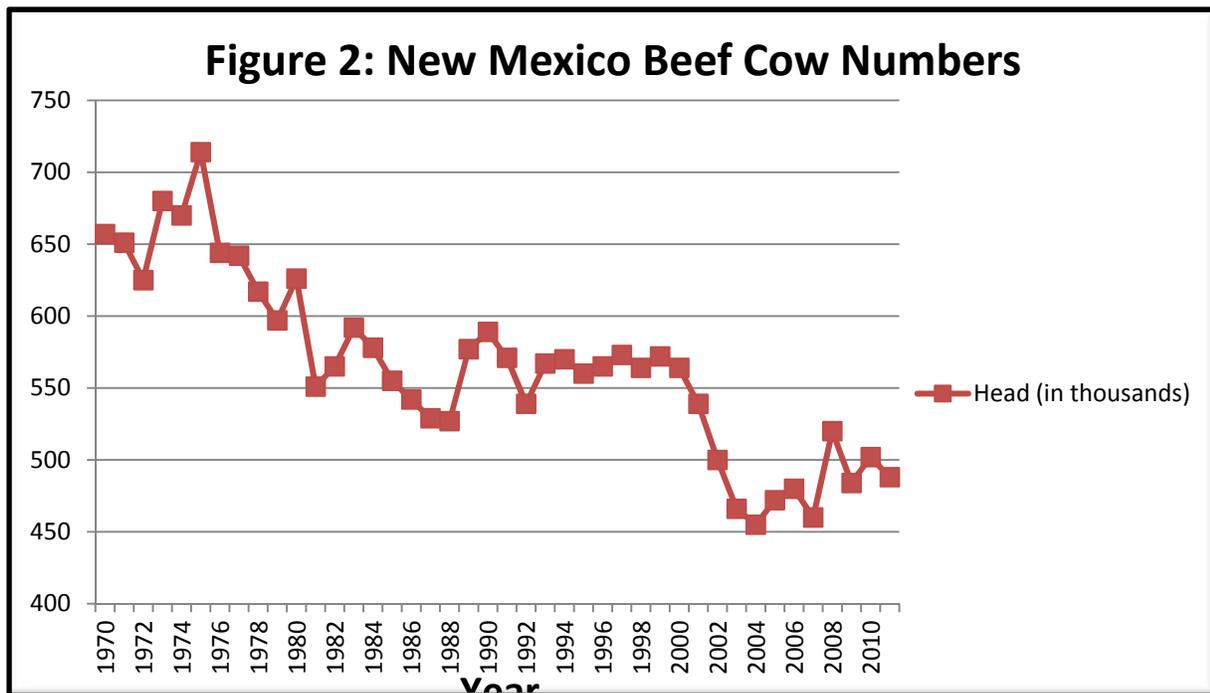
Of the approximately 78 million acres that comprise New Mexico about 66 million acres have grazing potential. A more accurate value of the land actually being employed in a grazing program is difficult to measure. The consensus of land owners and land managers is that of the 66 million potential acres only a portion of those are currently supporting beef cattle. Although this value is unknown, the New Mexico Department of Agriculture estimates that the current number of beef cattle in the state, 460,000, provides the level of grazing that maintains long-term ecological health for native rangelands.

Table 2: Land Composition of New Mexico

<u>Land Class</u>	<u>Acres</u>
Private	34,831,346
State	
State Trust Lands	9,413,017
NM Game and Fish	165,000
State Park Service	8,720
Federal	
BLM	12,837,042

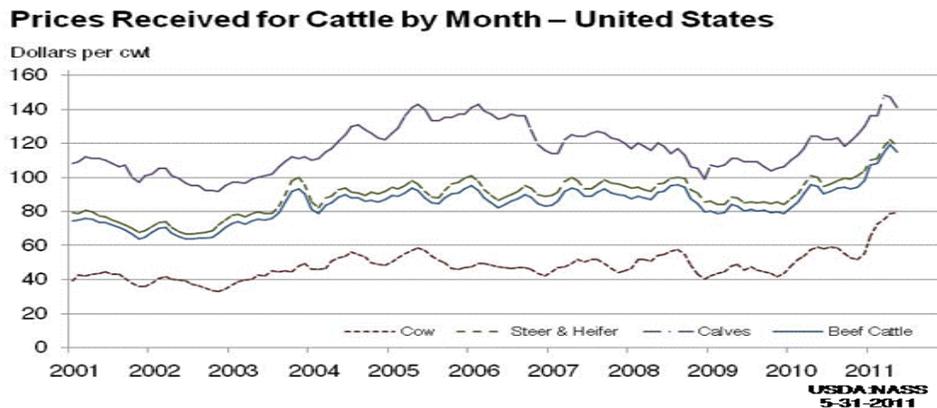
USFS	9,079,262
Native American	7,962,742
Military	3,099,068
National Park Service	247,961
Bureau of Reclamation	179,839
Corp of Engineers	26,476
US Fish and Wildlife	15,767
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Total	77,866,240

The New Mexico beef cow herd reached a peak level at 714,000 in 1974 and a minimum number of beef cows in 2004. Range conditions and availability grazing lands continually change thus forcing producers to adjust their operations. Figure 1 provides a detailed trend of the changes that have existed in the New Mexico beef cow inventory since 1970.



New Mexico beef cattle prices are cyclical, and beef producers are price takers as is the case throughout agricultural products. The prices shown in Figure 2 provide a necessary look at

the cyclical nature of beef animal prices received. Agricultural producers may have the opportunity to enhance the price received through marketing alternatives such as branding the product, value added calf programs, and other marketing alternatives.



### *New Mexico Cost and Return Estimates*

New Mexico cow-calf production relies on many differing factors every year. Some of the biggest factors are financial and economic considerations. Without these data, the success of range livestock producers would not be possible. This information not only benefits the producer, but also helps the lending institution; land appraiser and other parties understand the accounting structure and aggregate profitability of the business. Cost and return estimates directly impact ranching operations. These estimates could include land use policy development, property taxes, and credit analysis for financial decisions; both current and future.

Determining the value added portion throughout the value chain for beef production in the state of New Mexico is dependent upon a solid understanding of the current situation. The

present scenario is represented by a comprehensive set of cost and return estimates which represent individual size classes of production throughout the diverse regions of New Mexico. The information provided below includes cost and return estimates for fifteen ranches, representative of New Mexico. The state was broke down into five regions: Central Mountain, Northeast, Northwest, Southeast, and Southwest. Within these five regions, size of each ranch varies from small in the Central Mountain and Southwest to extra-large in the Northeast, Northwest, Southeast, and Southwest.

The data included in this cost and return estimate illustrate the on-going changes in the cow-calf production industry. The included graphs show changes in the early 2000s due to economical changes throughout the nation. There are also significant changes starting in late 2008 because of changes in the national political climate. Changes in variable costs are largely due to fluctuating fuel prices over the years, especially since 2000. These unpredictable fuel prices have increased the transportation costs of beef. The increase of ethanol production has caused feed prices to soar in recent years. A drought lasting over a decade has also contributed to a rise in feed prices. Some of the regions experienced significant changes in fixed costs from 1999-2005 due to a decrease in herd size, which can also be attributed to drought ridden pastures. The passing of the Food Security Act of 1985 (one of the pieces of legislation commonly referred to as a 'Farm Bill') established the national Beef Check-off program, which has helped cattle producers in to market their beef, also helping to improve consumer knowledge and providing hopes of increased beef prices. The variations in costs have made it difficult for producers to maintain an economic presence.

## New Mexico Cost and Return Estimates

Cost and return estimates are defined by regions and size classes within each region. Table 2 defines the size classes that are represented in the cost and return estimates.

Table 3. Ranch Size Classifications

<u>Class</u>	<u>Number</u>
Small	< 100
Medium	< 300
Large	> 300
Extra Large	< 500

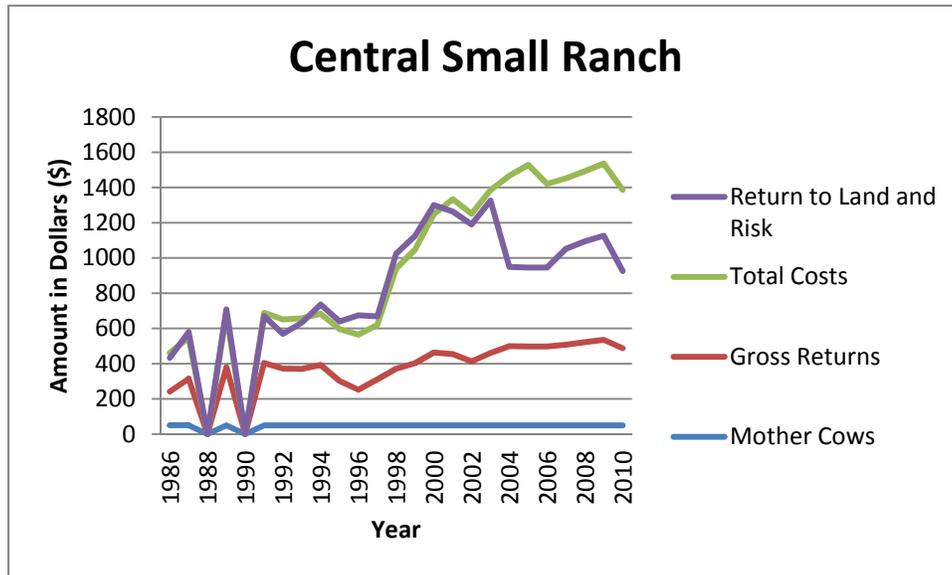
### Central Mountain Region:

The Central region of this data set is comprised of nine counties including; Taos, Rio Arriba, Sandoval, Santa Fe, San Miguel, Bernalillo, Torrance, Lincoln, and Otero. The ranches used in the data are cow-calf operations that have a set of similar geographical traits. The topography of the Central region ranges from high alpine meadows to low valleys. Precipitation throughout the year varies from as little as eight inches to as much as 30 inches amongst the different topographical locations of the region. The heavy snow pack in winter months and rain during the summer contribute to the annual precipitation. There are both warm and cool grasses as well as coniferous forests and browse species. (Hawkes et al. 1998)

### Central Small:

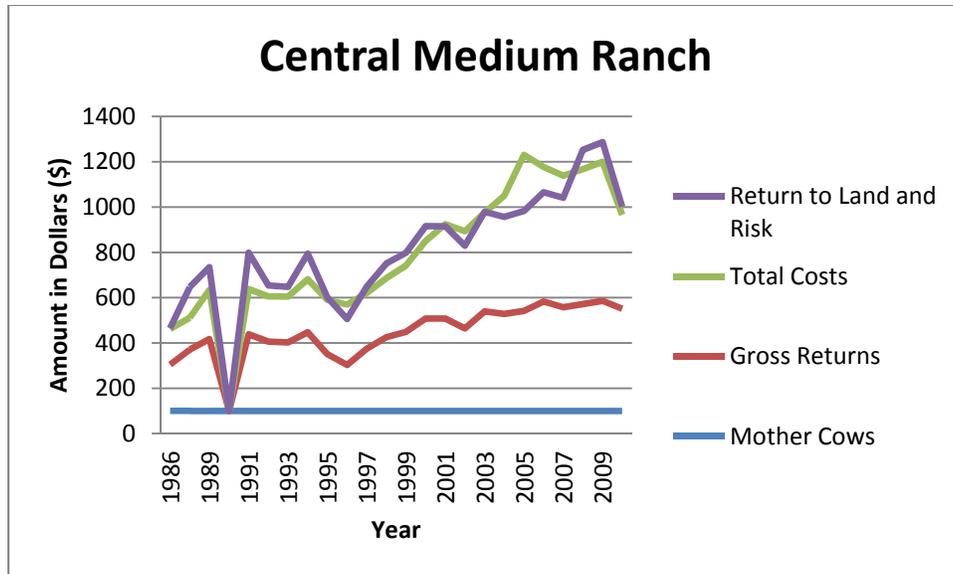
The data collected for the Central Small Ranch size show the average herd to have 50 mother cows each. Although data for 1988 and 1990 are missing, the existing data provide an accurate portrayal of Central Small Ranches. Between 1986 and 2010, the gross returns ranged from \$191.64 per head to \$485.78, with an average of \$360.96. Average total cost per cow for 1986-2010 was \$616.69, with a high cost of \$1,029.85 in 2005 and a low of \$219.53 in 1986.

With this information, the average return to land and risk was \$-132.91. Return to land and risk showed a high of \$109.85, and a low of \$-581.95. In this region the small ranches showed a cow to bull ratio of twenty to one and a cull rate of 15%, with a calf crop of 80%.



Central Medium:

The data for a Central Medium Ranch size shows a herd of 100 mother cows, averaging \$362.04 in gross returns. The smallest gross returns came in 1996 with a total of \$202.84; meanwhile the largest returns were in 2009 with a return of \$485.78. Total costs averaged \$360.48 over the 14 year span with a maximum point of \$688.92 and a minimum cost of \$140.92 in 1987. Returns to land and risk were the highest in 1991 with a positive return of \$160.99. The greatest loss occurred in 2005 with a negative \$247.46. Average return on land and risk was \$15.35. There was no data available for 1990. Medium ranches in the Central Mountain region had a cow to bull ratio of twenty to one and the same cull rate as small ranches, at 15%. The calf crop percentage was higher in medium ranches at 85%.



Central Large:

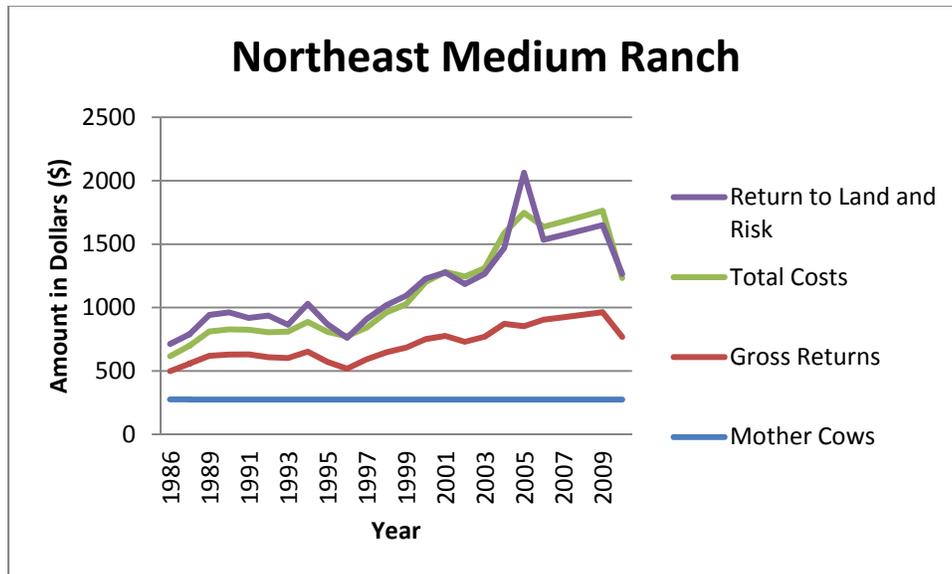
The Central Large study only included the 2010 year. For this year, the mother cows per herd were 200, with gross revenues of \$448.80. Total costs for the year were \$422.89, leaving a positive return to land and risk of \$25.91. The bull ratio and calf crops were the same for large ranches in the Central region as that of medium ranches; cow to bull ratio of twenty (20) to one. The calf crop percentage was also the same as medium ranches at 85%.

Northeast Region:

The Northeast region of New Mexico consists of prairie plains rangelands, mainly containing perennial grasses. Precipitation varies from 12-20 inches annually throughout the region. The region is represented of three size classes of ranches; medium, large, and extra-large. There are seven counties held within the Northeast region: Colfax, Curry, De Baca, Guadalupe, Harding, Quay, and Mora (Hawkes et al. 1998).

Northeast Medium

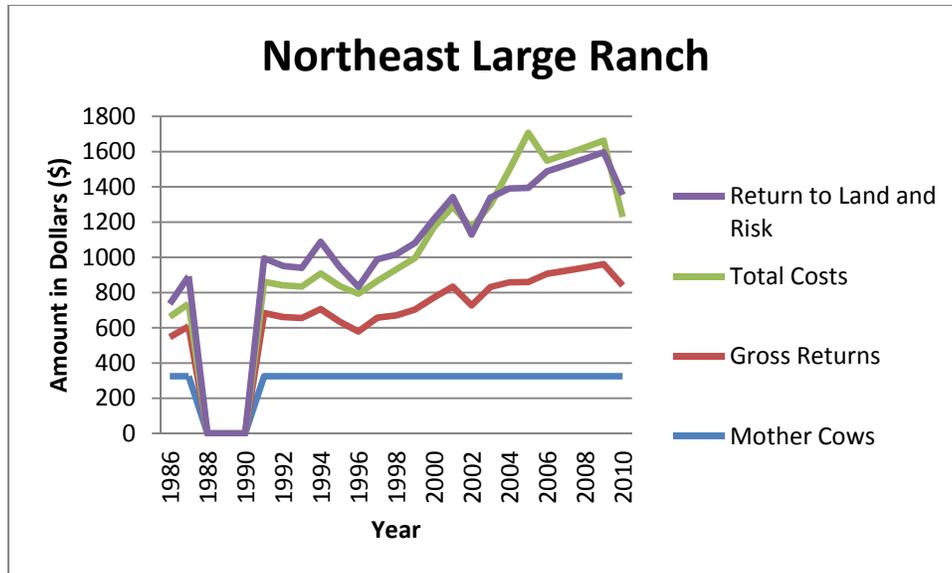
Northeast Medium Ranches show a much larger mother cow herd size of 275. Ranches in the region averaged \$436.24 in gross returns with a high of \$687.97 in 2009 and a low gross return of \$222.99 in 1986. The gross return average was the largest for the medium sized ranches in this region. The largest total cost year was 2005 with a total of \$894.09. 1986 had the lowest total cost with \$118.85. The 14 year average for total costs was \$417.76. Return to land and risk showed an average of \$34.66. 2005 had the best return with a total of \$316.34, while the previous 2004 year had the worst return with \$-116.75. The information pertaining to cow to bull ratios and cull rates were the same in the Northeast as in the Central Mountain region, a ratio of twenty to one and a cull rate of 15%.The calf crop percentage was still 85%.



Northeast Large

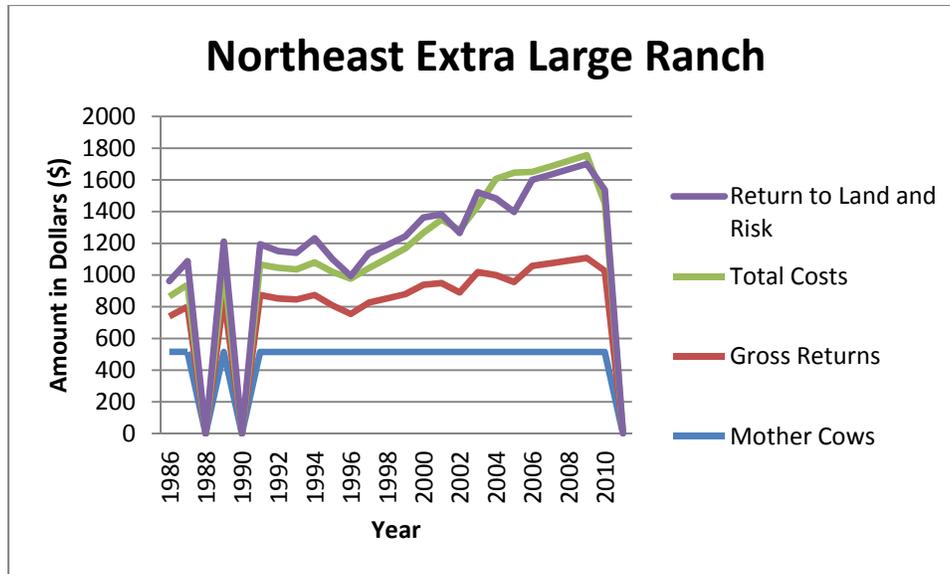
Data for 1988-1990 is missing from this set. The mother cow herd for the Northeast region was 325 head. Gross returns averaged \$427.80, with a high of \$635.66 in 2009, and a low gross return of \$221.97 in 1986 (which was also the year for the lowest total costs). 1986 total costs were \$115.45. The highest total costs occurred in 2005 with a value of \$847.53. The

average total costs for the time period was \$385.59. 2005 also returned the lowest return to land and risk with a negative \$313.05. Return to land and risk had an average of \$34.30 and a high return of \$179.63. The large ranches in the Northeast region showed a calf crop of 87%, slightly higher than previous ranches examined. The cow to bull ratio remained at twenty to one, as well as the cull rate of 15%.



Northeast Extra-Large

Mother cows for this region were at 515 head per herd. The average gross returns for the area were \$401.27, showing a high in 2009 with \$592.20 and a low of \$223.57 in 1986. Total costs reached a decisive high in 2005 at a price of \$688.92. The low cost for the 14 year time period was \$126.02 in 1986. The average for total costs was \$355.05. Return to land and risk averaged to \$41.21. In 1989 the high return was at \$161.30, while the low return came in 2005 at \$-247.46. The data was missing information for 1998 and 1990. The extra-large ranch size in the Northeast region showed a cow to bull ratio of twenty to one, cull rates of 15%, and a calf crop of 87%.



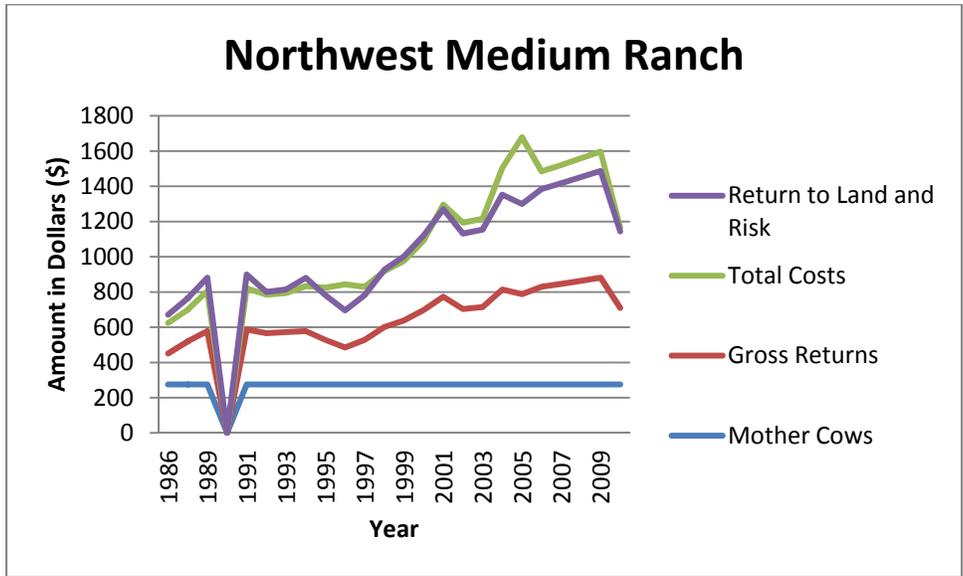
Northwest Region:

The Northwest region of the state is comprised of six counties. Within the counties of Bernalillo, Catron, McKinley, Rio Arriba, Sandoval, and San Juan, there are three ranch sizes, medium, large, and extra-large. Warm and cool grasses make up the rangeland of the Northwest, as well as piñon-juniper, oak brush, Ponderosa pine, and sagebrush. The precipitation ranges from 12-20 inches per year, with the summer months having the most moisture. Rangeland in this region has an animal unit yearlong (AUY) of 5-14. (Hawkes et al. 1998)

Northwest Medium

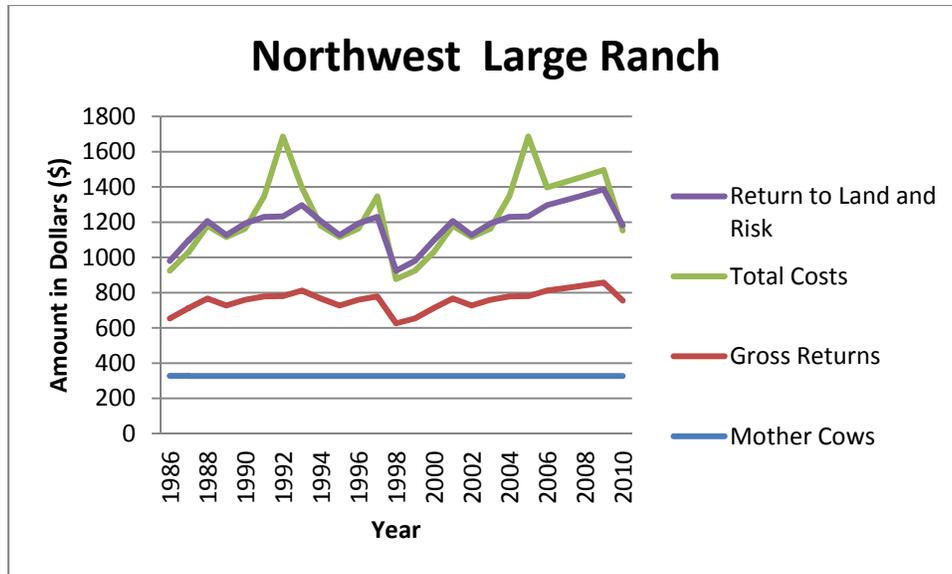
The medium size ranches in the Northwest have the same size mother cow herd as the Northeast ranches, 275 head. The gross returns averaged \$388.28, having a high in 2009 of \$606.31 and low in 1986 with a gross return of \$176.14. Total costs ranged from \$173.47 in 1986 to \$891.81 in 2005. The average total cost for the 14 years was \$426.35. Return to land and risk averaged a loss of \$-41.03 during the time span. The high return to land and risk came in 1991 with a return of \$77.80. The low was in 2005 with a negative \$379.54. The data set was missing information for 1990. Cow to bull ratios again the same in the Northwest region,

showing a ratio of twenty to one. The cull rate was at 15% in this region. The calf crop percentage was slightly lower at 84%.



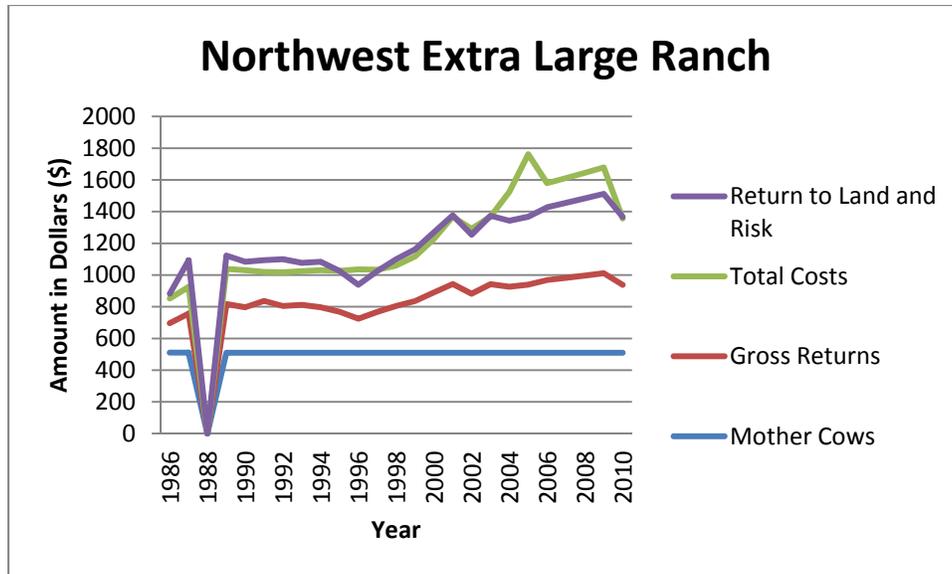
Northwest Large

The mother cow herd for this region was 327, only slightly larger than that of the Northeast region. The average of the gross returns was \$429.63, with the high in 2009 with \$529.71. The low gross returns came in 1998 with a total of \$298.50. Total costs averaged out to \$479.53. 1998 showed the low total costs with a total of \$251.31, while 1992 and 2005 had the total cost high with \$905.80. Return to land and risk had two years (1987 and 2000) with a high of \$67.46. There were also two low years, 1992 and 2005 with a low of \$-452.97. The average return to land and risk was \$-49.90. Large ranches in the Northwest region showed the lowest calf crop percentage at 83%, with a 15% cull rate and a cow to bull ratio of twenty to one.



Northwest Extra-Large

This region showed the mother cow herd to be 510 head. During the 1986-2010 time period, the average of gross returns was \$349.78. A high for the 14 year span came in 2009 at \$501.04 and the low was in 1986 at \$186.04. Total costs returned an average of \$374.44 when figured for the region. The high total cost was \$823.18 in 2005. The low however was once again in 1986 with a total cost of \$155.97. The return to land and risk had an average of \$-25.36. The ultimate low came in 2005 at \$-394.12. 1987 showed a high return at \$167.86. Data was not available for 1988. Cow to bull ratios, cull rates, and calf crop percentages were the same for extra-large ranches in the Northwest region as large ranches; posting figures of twenty to one, 15%, and 83% respectively.



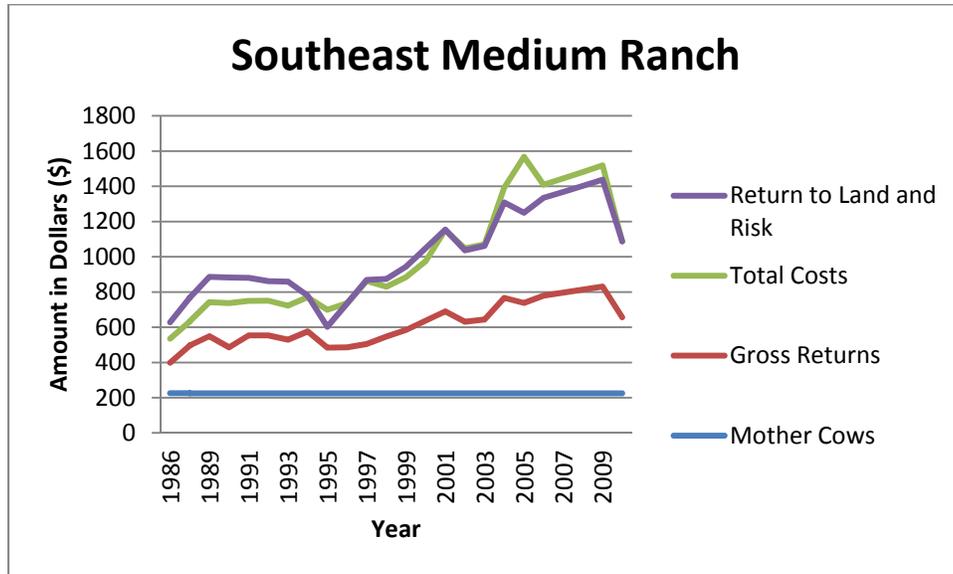
Southeast Region:

The data used for the Southeast region was gathered in Chaves, Eddy, Lea, Lincoln, Otero, and Roosevelt counties. The region is represented by three (3) different class sizes, medium, large, and extra-large. With elevations ranging from 3,000 to over 6,000 feet, the terrain varies from prairie land to rough areas. Precipitation varies from 12-20 inches annually in the region, with main grass species of grama, tobosa, and galleta. The most prevalent browse species are pinjon-juniper and oak brush. Due to the variability in the rangeland, it is estimated that the AUY is 3-17 per section. (Hawkes et al. 2011)

Southeast Medium:

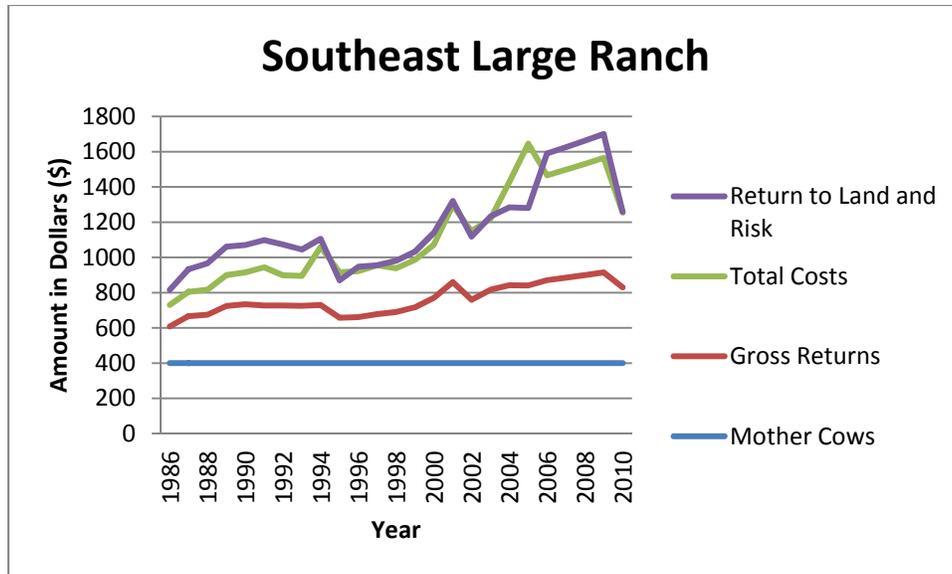
Herd size decreased slightly in the Southeast region to a mother cow herd size of 225. Average gross returns for the 14 year span in this region were \$388.84. The high gross return was \$606.20 in 2009, while 2005 had the maximum total cost at \$830.30. 1986 had the lowest gross return and lowest total cost with \$173.70 and \$136.29, respectfully. The average total cost was \$377.69. The return to land and risk was \$10.88, showing a high in 1990 with a return of \$145.12 while 2005 had the largest loss on return to land and risk with a total of -\$317.87. The

cow to bull ratio for southeast medium sized ranches was twenty to one. The cull rate for the medium ranch size was 15%, with a calf crop percentage of 83%.



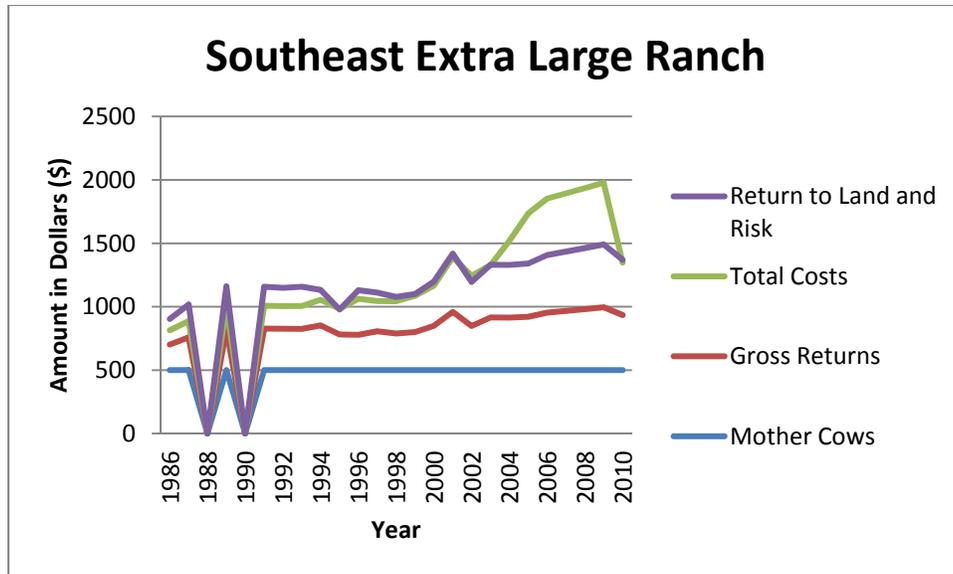
Southeast Large:

The data used for the Southeast region showed a mother cow herd of 400. The average of gross returns for the region was \$360.30 with a high gross return in 2009 of \$514.60. The low gross return came in 1986 with \$208.02. The average of total costs came to \$351.85. 1986 showed the lowest total cost of \$122.08, while 2005 had the highest total cost of \$804.55. Return to land and risk had a high return in 1992 with \$173.93. 2005 had the largest loss of return on land and risk with a negative \$364.14. The average of return to land and risk was \$56.89. The cow to bull ratio was twenty to one, the cull rate was 15%, and the calf crop was 83%.



### Southeast Extra-Large

The Southeast region had the smallest of the extra-large mother cow herds with just 500 head. The region did not turn in the lowest average gross returns though; they came in second with an average of \$361.34. The high gross return was in 2005 with a return of \$495.76. 1986 had the lowest gross return and total costs at \$201.62 and \$113.15 respectively. 2009 showed the highest total costs with a total of \$982.57, while the average for the time frame was \$416.53. The average returns to land and risk were in the negatives at a \$-58.13. The ultimate low came in 2009 at \$-486.81, while the high of \$151.83 was in 1993. No data was available in 1988 and 1990. Cow to bull ratios remained the same for this size ranch at twenty to one. The cull rates remained unchanged as well at 15%. Calf crop percentages rose one percent to 84%.



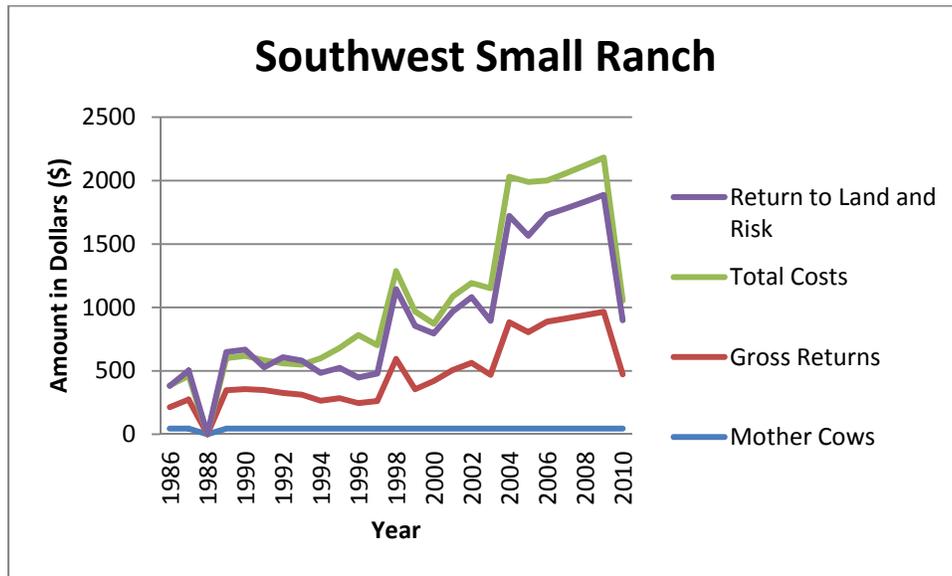
Southwest Region:

Information used for the Southwest region was gathered in five counties. Dona Ana, Grant, Hidalgo, Luna, and Sierra counties represented the region with three size classes of small, medium, and large. The varying altitude of 4,000 to more than 8,000 feet explained the differences in terrain of prairies to rough land. These counties experience 9-16 inches of precipitation per year. Black grama is the main grass species in the region with creosote and mesquite making up the majority of the brush plants. Due to the variations in soil, forage, and precipitation, it is estimated that the AUY is 5-14 per section. (Hawkes et al. 1998)

Southwest Small:

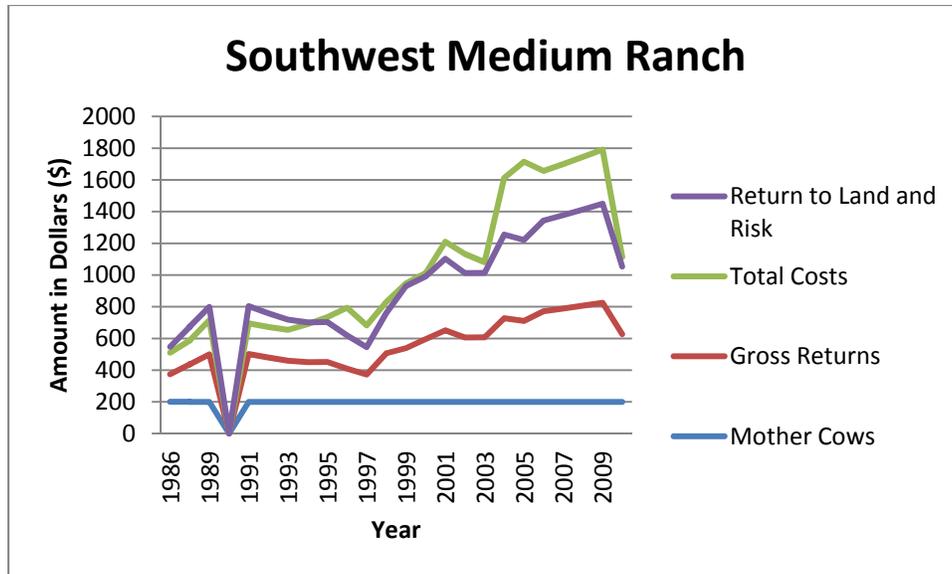
The data set based on a Southwest Small herd shows 45 mother cows per herd. Once again data is missing for 1988. Within this region from 1986-2010 there was an average gross return of \$455.51 per head. The average total cost for 1986-2010 was \$604.29, with an average return to land and risk of \$-146.02. 2009 showed the largest gross returns and total costs with totals of \$921.09 and \$1,215.29 respectively. The lowest year was 1986 with a gross return of \$168.20 and a total cost of \$171.08. The largest return to land and risk came in 1990 with a

positive return of \$49.17 per head, while the greatest loss came in 2005 with a \$-423.79 per head. The cow to bull ratio for the small ranch size in the Southwest region decreased from the consistent twenty to one shown across the rest of the state to a ratio of fifteen to one. The cull rate remained unaffected at 15%, with a calf crop percentage of 83%.



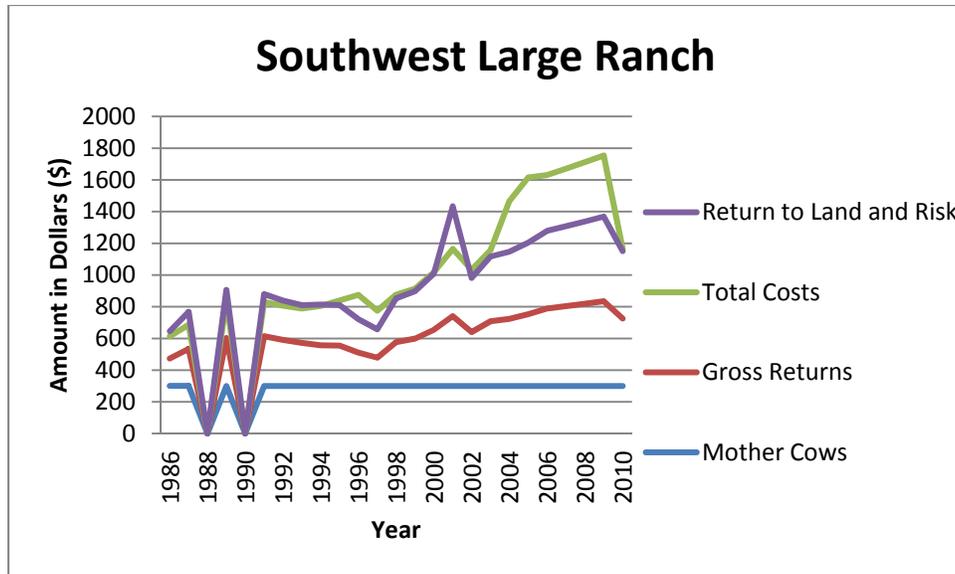
Southwest Medium:

The mother cow herd of 200 was the second smallest herd size for the medium sized ranch data collected. \$373.81 was the average for gross returns, which was also the second smallest gross return average for the ranch size. The best year for gross returns occurred in 2009 with a total of \$624.73. 1997 showed the smallest gross returns with a total of \$172.29. 1986 had the smallest total cost with \$136.29. 2005 had the largest total cost showing a total of \$1,004.71. Average total costs over the time period were \$482.09. The average return to land and risk was a negative \$108.28. The best return to land and risk came in 1991 with a positive return of \$107.92. The worst year was 2005 with a loss of \$494.10. The cow to bull ratio for medium sized ranches in the Southwest region was fifteen to one, with cull rates at 15%. The calf crop percentage was evaluated at 84%.



Southwest Large:

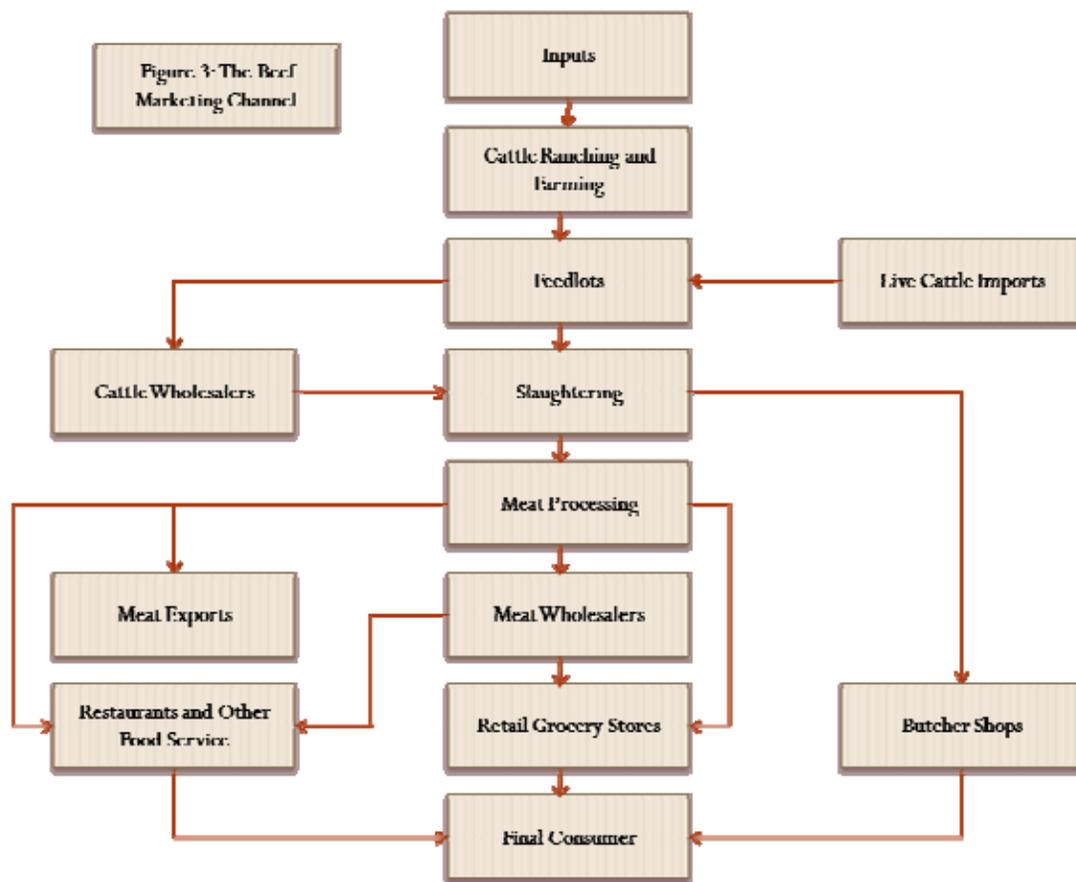
The mother cow herd size for this region is given at 300. The data set is missing years, 1988 and 1990. The average gross returns for the area were \$345.88 with a high in 2009 of \$534.47 and a low in 1986 of 172.79. Total cost average was almost \$100 more than the gross returns, coming in at \$442.56. The high for total costs came in 2009 at \$919.46, while the low was at \$140.77 in 1986. Return to land and risk averaged at \$-91.16, with an ultimate low at \$-411.25 in 2005. The definite high came in 2001 at a return of \$268.99. The cow to bull ratio, cull rate, and calf crop percentage all remained unaltered for large ranches from the information evaluated for medium size ranches in the region. Figures were as follows: cow-to-bull ratio of fifteen to one, cull rate of 15%, and calf crop of 84%.



Cow calf production across the state of New Mexico indicated projected returns to be well above long-term expectations due primarily to increases in prices received. Beef cattle production in New Mexico has reached levels of gross revenue that have not been experienced. Aggregate price levels in 2010 and 2011 have beget the profitability of today. The values seen in the previous two production periods are historically high and expectations are that these price levels will likely return to a level more in line with the historical perspectives of the New Mexico beef industry.

As previously mentioned the demand for meat on the Americans tables has been increasing for the past twenty years. This increase has been noticeable as the consumption of white meats such as poultry and pork has shown an increase in demand, but beef and red meats have indicated a reduction in demand. What are some of the mitigating factors that have spurred this trend for the past two decades? Some areas of possible exploration are vertical integration, consumer health concerns and consumer taste and preference; all of which affect industry demographics, real prices.

Vertical integration, expanding into other levels of the marketing channel, has played a role in this trend as is witnessed by both the poultry and pork industries today. Each of these industries delivers the concept of taking their product from conception to the table. Would this be a valuable endeavor for the beef industry? What limitations would exist should the beef producer consider such a change in production perceptions?



One key factor when considering vertical integration is the size of the operation. Beef cattle across the nation require an average of 6.5 acres per head per year (Census of Agriculture, 2002) to meet their forage demands. This value would be larger in a rangeland situation in the western United States such as New Mexico, where 90 acres per animal is not unusual. The overall physical characteristics of poultry and swine operations are much less than those required

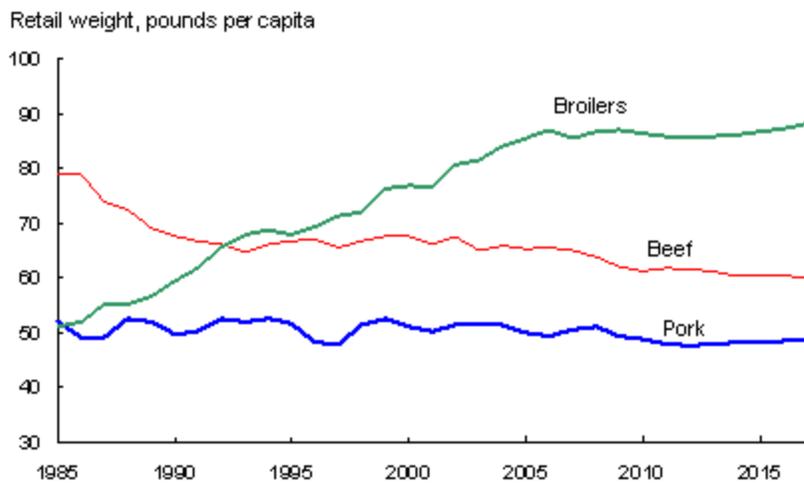
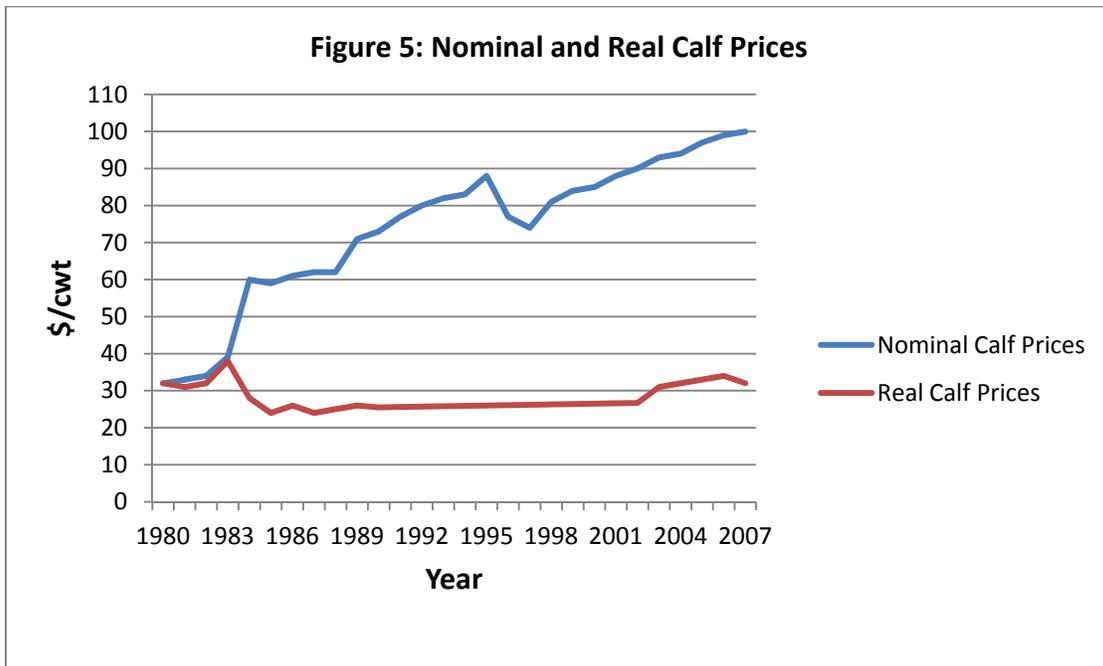
for a beef producer when one considers the physical base required. In addition, the sheer number of producers growing beef cattle today is greater in comparison to the number of poultry or pork producers. The ability to organize a horizontally integrated industry is hampered with the volume of growers and geographical diversity in the beef industry when compared to the lower number of growers directly involved in the pork and poultry industries. It is much easier coordinating fewer individuals and directing them in a specific direction. The relative lack of a corporate structure in the beef industry is apparent. As the independence levels expand in an industry, the willingness of an industry to follow a certain set of guidelines for the common good is certainly reduced. The remoteness, business structure and independence of beef cattle producers are some of the reasons why it is difficult to better organize this industry and move forward with one voice and production objectives. Without strong organizational ties the ability to vertically integrate is virtually non-existent.

There have been advances in the overall perspective and direction that sectors of the beef industry has taken to move towards greater cooperation within the market place. These attempts have focused around cooperative developments in conjunction with favorable market and environmental conditions becoming important factors for successful partnerships within the industry. The continued coordination that exist within the market place for beef products has continued to gain traction as a possible method of enhancing overall profitability to both the individual as well as sectors within the aggregate market.

### *Markets*

Real prices for beef to the producer have dropped slightly from those experienced in 1967 (Figure 5). With recent sharp increases in grain, oil, and transportation costs, the ability to maintain a strong economic presence under this price structure is difficult at the minimum. The

concept of cost price squeeze certainly is applicable in the beef industry when considering the nominal versus real prices of beef from 1967 through 2010.



Source: *USDA Agricultural Projections to 2017*, February 2008.  
 USDA, Economic Research Service.

### Value Chain

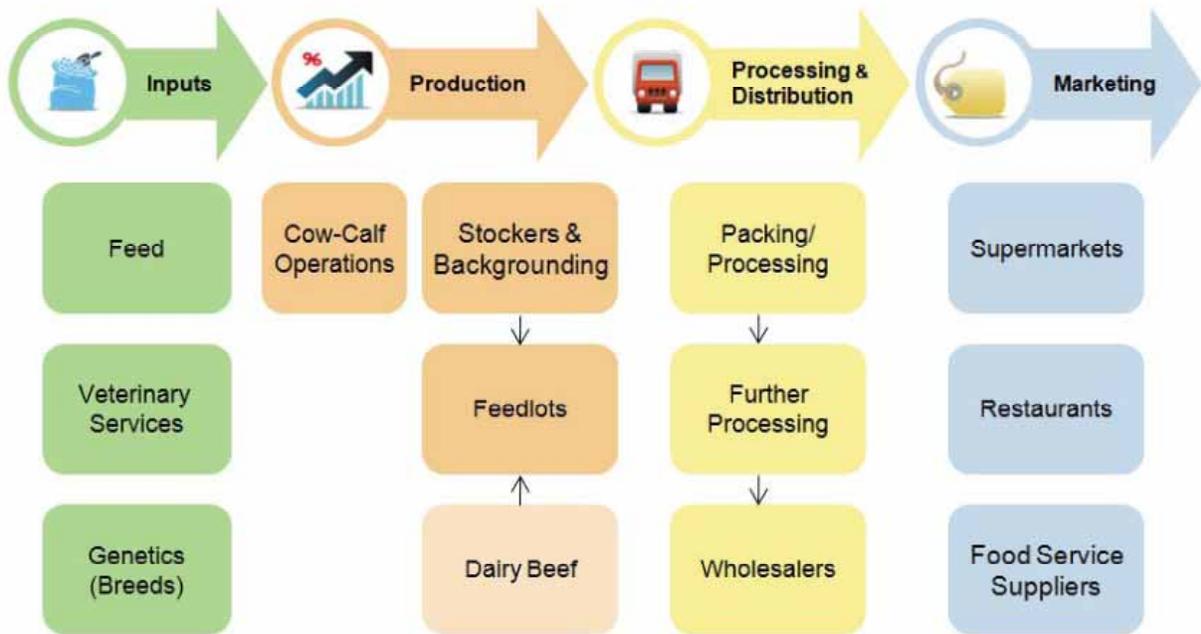
The beef industry value chain is clearly shown in Figure 6. The premise is that the process is defined by five individual activities within the value chain. These are; inputs,

production, processing and distribution and marketing. Components that comprise this process range from feeding to the final product being delivered to the food service establishment or retail outlet.

A key factor to consider is the lateral involvement of dairy cattle in the beef cattle value chain. It is difficult to ascertain the aggregate level of dairy cattle that enter the beef market, but a study by Matthews et al. estimates that this value is approximately 18% of the total beef marketed. These values are primarily derived from culled dairy cows which are turned into ground meat. The majority of this product will end up in the fast food establishment chain or a grocery store.

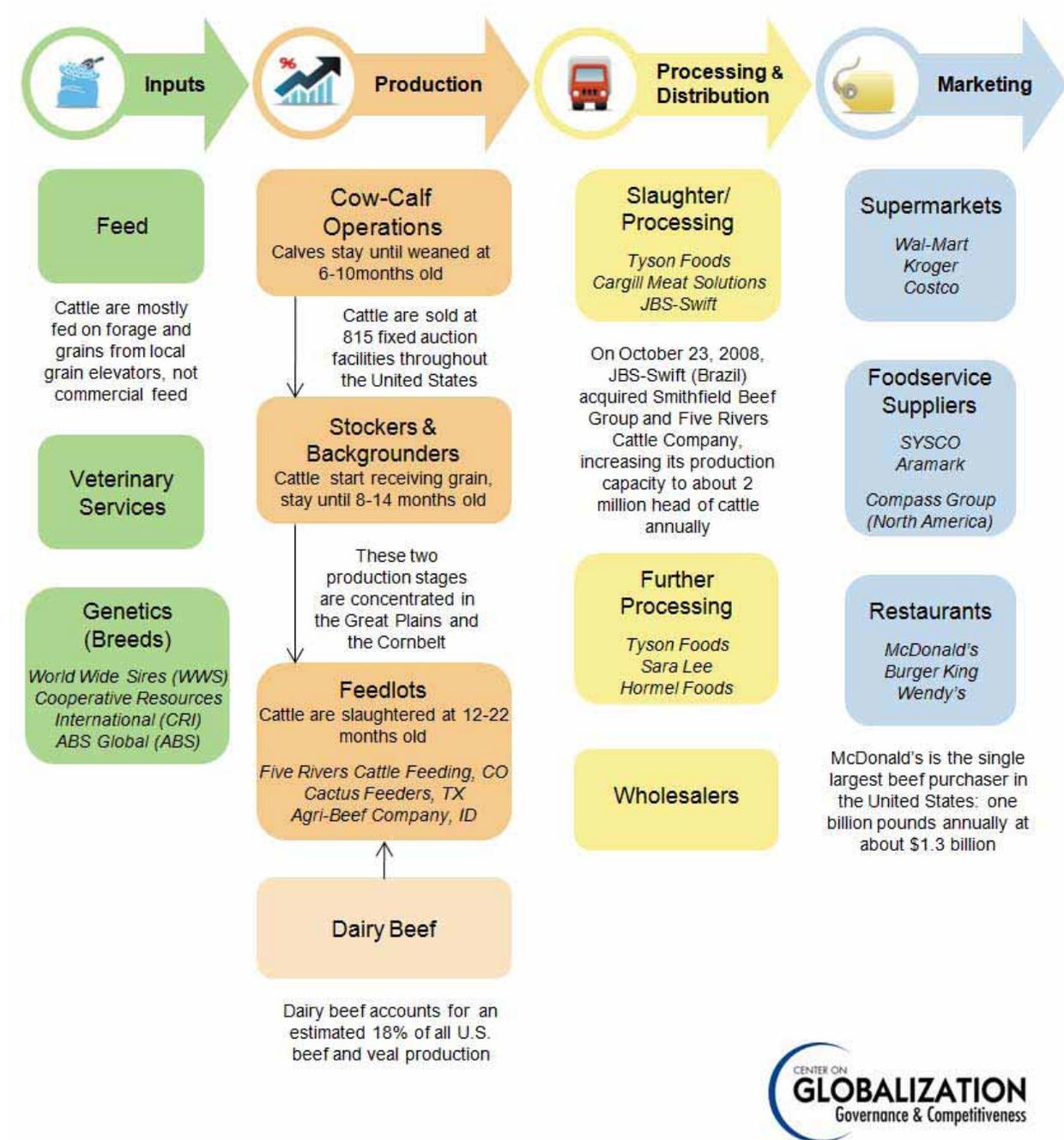
A final picture of the beef value chain would be an excellent view point, but this data is difficult to determine. USDA studies in 2006 estimates that 87% of all beef products consumed are fresh. This assumes that the product is cooked right before consumption. The remaining 13% would then be estimated to be included in processed food products. Ground meat is assumed to represent greater than 40% of the total beef market while steaks comprise an additional 20%. The remaining 40% would be made up of processed goods, roasts and stew type products.

Figure 6: Value Chain Representation



Dairy beef accounts for an estimated 18% of all U.S. beef and veal production

Figure X. Value Chain Representation with Key Players Included.



Foodservice suppliers and operators satisfy one leverage criterion: players with significant name recognition. The segment certainly has major players (Compass Group, Sodexo, Aramark) but since it is difficult to obtain data on market share, the degree of concentration in the industry has not been determined. Foodservice can be defined as all meals, snacks and

beverages that are prepared away from the home. Foodservice is different from the retail industry (see supermarkets, above) in that retail food either does not require any preparation, or it is intended to be prepared in the home. Establishments that offer foodservice, by contrast, include restaurants, hotels, cafeterias, schools, hospitals and correctional facilities, among others. However, the industry also encompasses activities from the adjacent segment of the value chain (Processing/Distribution), including food product processing, equipment and supplies and wholesale delivery of these products to foodservice establishments (Technomic, Inc. 2006).

The foodservice industry can be divided into four main categories. It is important to understand that there is a great deal of overlap between the functions of these different segments (Urban, 2008). The four main categories are as follows:

- Distributors or suppliers,
- Foodservice management companies,
- Restaurants:
- Foodservice manufacturers.

A factor that should be considered in defining the process of the food service industry is that today there are approximately 900,000 foodservice outlets and 27,000 supermarkets throughout the United States. This becomes significant when considering the aggregate volume of the value chain represented by the beef industry.

Supermarkets/Retailers satisfy three leverage criteria: a highly concentrated market, a single player with at least 20% market share (Wal-Mart's total retail share), and several players with significant name recognition. Supermarkets are the largest buyer of beef products,

accounting for 32% of the beef market (RTI International, 2007), with concentration increasing since the late 1980s (Callahan & Zimmerman, 2003).

The further processing segment in the beef value chain satisfies three leverage criteria: a highly concentrated market, a single player with at least 20% market share (Tyson Foods), and several players with significant name recognition. This segment is rapidly becoming a subset of the major packing companies, which are highly concentrated, vertically integrated, and becoming increasingly involved in the higher value-added activities of further processing. The major packers are now acquiring processing companies; for example, in 2007 JBS Co. acquired Swift, the world’s third-largest processor of fresh beef and pork products (JBS-SA, 2007). As a consequence of this trend, beef further processing is also becoming more concentrated, with the same top companies dominating: Tyson, JBS Co., and Cargill. Tyson manages three main brands for further processing: Bonici, Tyson and Wright (Tyson, 2008b). These brands are involved in the preparation of ready-to-eat meals, hamburgers and marinated beef sold in supermarkets in the form of frozen, refrigerated or canned products. In the case of JBS Co., the company also manages a variety of further processing brands such Friboi, Sola, Swift and Anglo. It trades its products under clients’ customized brands or under the company's brand (JBS-S.A., 2008).

Table X. Top 5 Beef Supply Firms, Billions of Dollars

Tyson	26.9
Sara Lee	13.3
Hormel	6.2
Kraft	5.1
Keystone	3.3

Source: CGGC, based on Hoovers, OneSource, DataMonitor, Ward’s Business Directory, and Company Annual

### *Consumer Preference*

A study conducted at New Mexico State University found that region of origin is the most important factor for consumers when purchasing beef products, regardless of sex, education, or knowledge of beef characteristics (Hawkes and Elkins, 2010). It has also been shown that a local or regional branding program is the most effective way to brand beef products. Additionally, these programs have become a popular source of value adding among states due to the relatively small amount of money required to fund such a program. Studies have shown that consumers are directing their purchases for many commodities towards local markets. Criteria defined as valuable factors when consumers are making beef purchases include; product image, market availability, consistent supply, price, consistency in the product and finally quality. Additional studies have shown that consumers emphasize price, quality, availability of local products and supporting a local economy as key components in their purchasing decisions.

### *New Mexico Program:*

New Mexico has been presented an opportunity to expand their marketing impact of beef products throughout New Mexico. This program is a combined effort of the New Mexico Department of Agriculture, Sysco New Mexico, Heritage Foods, Unger Meats and Ratcliff Ranches. The influential list of partners in the program has only strengthened the overall impact potential represented for this commodity. The proposal, now implemented with more than 2,500 New Mexico cattle, is directed at both the food service industry as well as the grocery stores. The primary emphasis is currently within the food service industry with the ability to serve many restaurants in the state.

A solely New Mexico bred and fed program could resonate more and therefore command a higher premium with consumers in the state. Furthermore, with a population of approximately 2.3 million people, including a combined population of nearly 1.4 million living in the greater Albuquerque, Las Cruces, and Santa Fe areas, a New Mexico beef branding program could find a significant market in which to operate.

Figure 8: Map of New Mexico



### Grass Fed Beef

The USDA has provided “USDA certified” and “USDA verified” programs since 1978 and 1996, respectively. The certification program is based on visible carcass traits while the verification program is based on quality traits that cannot be confirmed upon visual inspection of the product such as certain feeding or other animal husbandry practices. In 2002, it was deemed necessary to outline specific guidelines to manage various claims of verification by producers.

One of the verification programs outlined was the grass fed beef production process. According to the USDA, grass fed beef “refers to the feeding regimen for livestock raised on grass, green or range pasture, or forage throughout their life cycle.” In 2007 it was stated more specifically:

Grass and forage shall be the feed source consumed for the lifetime of the ruminant animal, with the exception of milk consumed prior to weaning. The diet shall be derived solely from forage consisting of grass (annual and perennial), forbs (e.g., legumes, Brassica), browse, or cereal grain crops in the vegetative (pre-grain) state. Animals cannot be fed grain or grain byproducts and must have continuous access to pasture during the growing season. Hay, haylage, baleage, silage, crop residue without grain, and other roughage sources may also be included as acceptable feed sources. Routine mineral and vitamin supplementation may also be included in the feeding regimen. (United States Standards for Livestock and Meat Marketing Claims, 2007)

This much more stringent revision of the 2002 rule that claimed that only 80% of an animal’s primary energy source had to come from grasses and forage was found to be necessary after it was determined that the 20% variance allowed for a significant amount of time finishing animals on grain products.

Grass fed, or pasture-finished, beef has been gaining in popularity along with several other forms of beef being provided to niche markets. Often seen as an inferior product by commodity beef packers due to the less appealing color of the meat, lack of marbling and tenderness, and distinct grassy flavor, grass fed beef has long received a lower price than its grain finished counterpart. However, changes in production practices, as well as a shift in consumer views of growth promoters, feeding facilities and other factors have prompted an

increase in the demand for a more naturally finished meat product. Grass fed beef programs may now be able to command a premium above commodity beef in certain markets, but face specific challenges that grain fed programs do not.

Very little research has been done on the market power grass fed beef producers have for demanding a premium price in today's niche markets. However, grass fed beef systems are often combined with all-natural programs which have been found to command a premium of anywhere from 10% to 30% above that of commodity beef. Much of the premium could be gained through properly marketing grass fed beef's health benefits over grain fed beef. These include being higher in beta carotene, conjugated linoleic acid, and Omega-3 fatty acids, all of which have been shown to reduce cholesterol, diabetes, cancer, high blood pressure and various other cardiac problems. Grass fed beef is lower in fat, calories, and cholesterol and has a vastly lower risk of E. coli contamination risk than grain fed beef (Acevedo, Lawrence, & Smith, 2006). However, the premium could be degraded by the fact that grass fed beef often lacks the amount of marbling and tenderness that many consumers have come to expect and prefer.

#### *Grass Fed Value Chain*

Value chain analysis (VCA) of grass fed beef cattle is similar in nature and definition to that of commercial beef operations. These factors while directed at different consumer bases hold many of the same characteristics that are found in the aggregate beef value chain. The process must include the basis for the overall intention that must be recognized as the producer. Industries that are impacted and contribute to the VCA include; inputs, livestock producers, harvesting facilities, processing the product, marketing products to either wholesale or retail outlets and finally the distribution of the demanded product.

La Montanita Cooperative has established a program that addresses the components found in the value chain for these specific beef products. This firm has founded relationships with producers and processors in order to facilitate the overall mission of the value chain. The relationship between each of the segments found in the value chain has continued to expand and provide greater effectiveness for all interested parties.

Cattle are retained by the producer incorporating essential inputs in order to create the desired product until approximately 18 months of age. At this point in the chain the cattle are delivered to a processor in Southern Colorado where the animal is then harvested. The continued processing of the animal is completed and then provided to either the wholesale or retail markets. The type of cuts of the processed animal often determines which market the final product enters. This VCA has been shown to be an effective measure of the grass fed market found in New Mexico.

La Montanita's program was defined in a persona interview. Those producers entering this structure will typically hold their livestock until approximately 18 months of age when they weigh about 1,150 pounds on the average. Producers are then paid on the hanging weight of the animal. Current prices for animals that grade at the top of the scale is \$2.55 per pound on the rail. Animals that grade below the top of the scale trade at \$2.17 per pound on the rail. The average hanging carcass weight is estimated to be 625 pounds. Summed values for the animals would then be estimated at \$1,594 and \$1,356 respectively.

This program as defined by the operators has shown that growth is in fact taking place at a reasonable rate. This managed growth factor has been gauged as successful by each of the entities that comprise the aggregate VCA. Anticipated growth has been considered and plans are being implemented to accommodate this expected volume changes in the relatively near future.

## **Conclusion and Recommendations**

Assessing the value chain for New Mexico beef cattle associated with both commercial and grass fed operations has shown to have opportunities for the entire chain. Programs are currently in place that accommodates the potential enhancement of market structures for New Mexico producers. The analysis of these programs suggests that the potential for a producer entering into these agreements will have the possibility of significantly enhancing their net income.

A commercial New Mexico beef producer may increase their income by as much as \$60 per calf sold. This value is significant in the producer's ability to sustain productivity in a historically thin margin market. Both liquidity and solvency measures are positively impacted in programs such as these for those involved. It must be noted that market structures currently in place will not accommodate all commercial beef cattle in the state but rather a portion of those available. Grass fed beef cattle producers are also progressively pursuing methods to positively impact the value chain directly related to their industry. These producers, processors, and marketing organizations have in place programs that are currently expanding and attempting to meet the demands of the entire value chain.

A key component of the value chain is to continue to discover the demands that the consumer is placing on the industry and attempt to meet those through interactive approaches including each of the levels that are included in creating the final product. The New Mexico beef cattle industry is progressing with assistance from the New Mexico Beef Industry Improvement Task Force towards these functions and the programs in place that have been assessed indicate that profitability measures for the entire value chain have potential to be enhanced. Continued

efforts and dedication to research and development should be included in continuing the programs that are currently in place throughout the state of New Mexico.

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# **Improving Opportunity in New Mexico Beef Value Chains**

11/4/2011

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## **Introduction**

New Mexico BII-NM, a multi-stakeholder body comprised of industry and support agencies, has been working to identify and address barriers to success for New Mexico ranchers and beef industry players since Fall 2007. It has identified 6 strategic goals to pursue in order to improve opportunities for the beef industry in New Mexico. The development of successful New Mexico Branded Beef programs has consistently emerged as a need and opportunity. As a result of a 2009 FSMIP grant from USDA, BII-NM has the opportunity to encourage local beef value chain development in New Mexico. This report, commissioned by the Southwest Cooperative Development Center, funded by a USDA RCDG Grant, identifies barriers to success and includes recommended next steps in addressing these barriers.

The task of marketing local beef is difficult. The frustration of dealing with suppliers, customers, and especially processors leads many producers or marketers to think if only they could go upstream and buy processing capacity, they could hold on to more of the marketing dollar. While working with processors can present frustrating challenges, there is a greater challenge facing marketers who hold physical beef inventory face when it comes time to sell their product. The challenge centers on this question: Should we hold more inventories and focus on customer service and sales or should we hold fewer inventories to minimize our costs? The purpose of this paper is threefold. First, I will propose that a new processing facility is not needed and explain why I believe this to be true. I will also explain how I believe local beef marketers can work better with local processors. Second, I will highlight the problems beef marketers face and their root causes. Third, I will propose some low risk solutions which are

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designed to improve profitability, return on investment, and cash flow for beef marketers that hold physical inventory.

## **Section 1: Is a new processing facility needed?**

After going over literature and speaking with various processors in the region, I find little or no evidence that a new processing facility will improve the situation for local beef marketing in New Mexico. First and foremost, a survey performed by the Beef Industry Improvement of New Mexico states that, “the vast majority of processors have excess capacity.”<sup>1</sup> This would support anecdotal evidence gathered during conversations with four regional USDA inspected processors, in which these processors stated that they had excess capacity. It is also important to note that there are larger, more modern, USDA inspected kill and fabrication facilities in Texas, not far from major population centers in New Mexico. Based on this information, it is hard to justify a new kill and fabrication plant.

The lack of need for a processing plant is further highlighted through interviews with local beef marketers<sup>2</sup>. Conversations with two local beef marketers revealed numerous challenges, none of which centered on processing. **If small and very small processors<sup>3</sup> state they have excess capacity and local beef marketers are not constrained by the lack of processing, it becomes even more difficult to justify a new facility as it is unlikely that a new facility will actually solve the key problems inherent with marketing local beef.**

### **Working with Processors for Less Headaches**

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<sup>1</sup> New Mexico State University. 2010. *New Mexico Meat Processor Survey*. Accessed on June 18, 2011. [http://www.nmagriculture.org/associations/6645/files/BII\\_Processor%20Survey%20Write-up.doc](http://www.nmagriculture.org/associations/6645/files/BII_Processor%20Survey%20Write-up.doc)

<sup>2</sup> Organizations sourcing live animals from the region, processing as a fee for service in the region, and selling beef for consumption within the region.

<sup>3</sup> Small meat plants are plants with 10-499 employees and very small plants are plants with less than 10 employees or less than \$2.5 million in total sales.

The facts above do not address the quantifiable negative experiences that some New Mexico beef marketers have had with small processing facilities. The most important question is: Why do some small beef marketers have trouble finding capacity while New Mexico processors and processor surveys state that they have excess capacity?

Looking deeper, it is not entirely difficult to explain this discrepancy. First, it is important to understand the processor point of view clearly. Once this point of view is understood, it is possible to modify actions with the intention of creating mutually beneficial scenarios for both the processor and the beef marketer. The following section is geared towards small producers or cooperatives seeking to market inspected beef, but not having sufficient volume to use big plants in the region. The following section highlights some actions that can be taken to work better with our processors.

1. Slaughter beef more frequently and in smaller numbers. A small plant can only process a limited number of animals a day. When beef is brought in all at once, the plant becomes overloaded. This causes overtime, stress, and then later downtime (and lost sales) for the processor. Most processors will be resistant to taking numerous animals all at once. This is especially true when processors have other business to choose from that will cause fewer headaches. Ask yourself: Are you trying to get all your animals killed in large batches? Have you talked to your processor about slaughtering in smaller batches?
2. Avoid bringing your beef only at the busy time of the year. Many times hunting season and the best (cheapest) time for beef go to slaughter coincide. When this happens, there is competition between hunters, other farmers, and other types of animals that are easier or faster to process. Your processor usually has more business than he/she knows what to do with during the

busy season. Showing up in the busy season, but then disappearing during the slow season does not make you a valuable customer.

3. Ask for shorter hang times. Depending on the size of the facility cooler, asking for 21 day hang times can be a significant problem, especially combined with a busy season and large kill batches. When a large number of beef are brought in at the same time, each with a desired hang time of 21 days, the cooler becomes blocked and it is impossible for the processor to take more animals. The result is that processors are limited in the amount of animals they can take. Once the beef comes out, there is pressure (and overtime) to get all that beef processed in a timely manner. The result, less sales because of the beef blocking the system (long hang times) which then creates overtime due to beef coming out at the same time. A losing proposition for many processors.

For marketers that use multispecies inspected plants, it is also informative to understand the processors point of view in terms of the time it takes to process a beef. For example, processors generally chill hogs for 24 hours before they move out of the cooler and into fabrication. Additionally, in many small meat plant systems it is possible to fabricate six hogs to each beef<sup>4</sup>. If a locker can process and get paid for hogs in a fraction of the time it takes to process and get paid for beef, then it is not surprising that for many multi-species facilities, beef with long hang times is the least attractive animal to process. Imagine if a potential customer asked a beef producer to hold fat cattle longer, but was unwilling to pay for the extra feed, risk, or capacity that holding cattle longer would incur. This is similar to the situation of the processor who is asked for long hang times.

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<sup>4</sup> This ratio is approximate and can vary from plant to plant. However, almost all plants will have the ability to process hogs faster than beef, if only for the hang time difference.

Lastly, is a long hang time more valuable? Research shows that the most rapid tenderness improvements occur after 3-7 days of dry aging with a less rapid increase in tenderness through 14 days.<sup>5</sup> After 14 days, there is less evidence of tenderness improvements. In terms of flavor, it is true that some studies<sup>6</sup> report a more desirable beef flavor from long periods of dry aging. However, who pays to take on the lower yields due to moisture loss (17%)<sup>7</sup>, the cash tied up in inventory, and the lost throughput at the processor? Often, customers aren't willing to pay for these extra costs. Is possible that dry aging is not as valuable as many marketers think? In many cases, long hang times create costs that marketers never recoup.

### **Creating win-win scenarios for the marketer and the small and very small meat plant**

Changing policy to slaughter in smaller batches (e.g. slaughter more frequently and in fewer numbers) helps processors spread work out over a longer period of time. However, for many producers or marketers, this sounds like more work and higher costs for their own programs. While it is true that slaughtering more often can increase costs in terms of transport, it is also true that slaughtering more often can significantly decrease inventory costs and increase cash flow. When we slaughter in large batches it generally means that we are slaughtering for demand that can be in the future. The further out in the future that we are required to forecast what customers will want, the harder it becomes to anticipate what the actual demand will be.

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<sup>5</sup> Savell, J. 2008. The Dry Aging of Beef. Beef Checkoff. <http://www.beefresearch.org/CMDocs/BeefResearch/Dry%20Aging%20of%20Beef.pdf> Accessed on Feb. 20, 2010.

<sup>6</sup> Savell, J. 2008. The Dry Aging of Beef. Beef Checkoff. <http://www.beefresearch.org/CMDocs/BeefResearch/Dry%20Aging%20of%20Beef.pdf> Accessed on Feb. 20, 2010.

<sup>7</sup> Savell, J. 2008. The Dry Aging of Beef. Beef Checkoff. <http://www.beefresearch.org/CMDocs/BeefResearch/Dry%20Aging%20of%20Beef.pdf> Accessed on Feb. 20, 2010.

To illustrate this, we'll take the example of a small beef producer in the upper Midwest who uses an inspected slaughter facility to process beef that will be sold at an urban farmers' market, rural groceries, and local restaurants. In order to save time driving to processing facilities, this producer chooses to slaughter his animals twice a year (spring and fall). After he picks up these animals he takes them to a freezer trailer that he has on his farm. Over the next six months he draws from this stock and sells it to various customers. The producer slowly runs out of some cuts of meat, while others cuts sit waiting for a buyer. In this case, the producer is able to reduce transport costs. However, what are the costs and risks that he experiences? First, he is required to sit on cash tied up in inventory. How long can he really wait to get his money back out of those animals?

Second, a lot can happen in six months. Is it possible that this producer planned kill numbers under the assumption that customers and demand continue to be more or less the same? In this economy, a restaurant or small grocery going out of business is not a completely uncommon phenomenon. One logical conclusion is that saving on transport costs up front actually leads to higher costs and risks down the line.

Third, how long can he afford to not have the correct cuts of meat? When he slaughters in large batches, he is then required to anticipate how much ground beef, roasts, steaks, etc... he'll need to fulfill demand over that same time period. How much does it cost him to be out of product for a long period of time? Is it possible that he has disappointed many of his current customers and is turning off potential future customers?

## **Section 2: The Beef Marketer's Dilemma – To stock more or not to stock more?**

This section is geared specifically to the beef marketer who buys and holds inventory in readily available forms that are convenient to the customer. This is not geared towards farmers who sell whole, halves, or quarters from the locker. Nor is it geared towards brokers who do not take inventory into possession. Overall, this section highlights the challenges that local beef marketers who take possession of physical products experience. With that clarification in mind, let's examine several problems that keep coming up for New Mexico local beef marketers that I spoke with:

1. We suffer from product shortages.
2. We are forced to mark down products.
3. We have trouble selling the whole carcass.
4. We're having trouble building our volume.
5. We can't predict what will be demanded.
6. We are forced to buy parts of the animal we don't need.
7. Sometimes we turn away business.
8. It is difficult to be profitable with current local beef supply chains.

The list above looks complicated, but there is one central challenge within the eight listed above. Namely, it is very difficult to predict what customers will demand and when they will demand it. Consider this, how accurately can next week's sales be predicted? Maybe it is possible to be fairly accurate. Predicting next month's sales is more difficult. Predicting the sales of the next six months or a year becomes even harder. Look at the sales forecast from any company and it's easy to see how far these things can deviate from reality. The further out sales are predicted, the harder it is to get an accurate forecast.

In the beef business it is often required to hold primals, sub-primals, and even individual cuts. As that beef gets disaggregated down to the individual parts for consumption, we get more

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and more SKUs<sup>8</sup>. The result: When demand is predicted into the future and for a large number of SKUs, the ability to predict which SKU customers will want and when they will want it becomes a nightmare.

Unpredictability of supply is also a problem. If local beef is purchased directly from the farmer, that animal needs to go the kill and fabrication plant. For larger plants, it might take a week, on average, for the finished product to come back to the warehouse. But will it always be a week? Or, is it more likely that finished product won't come back for a week or a week and a half<sup>9</sup>? If resupply doesn't always happen like clockwork, then there is pressure to more in case there's a problem with deliveries. When working with smaller meat plants, the variability can become even worse. Is it hunting season? Did the head meat cutter go on vacation? These issues all lead to unpredictability of resupply.

The simple fact is, there is no such thing as a crystal ball and even with all the latest and greatest statistical prediction packages, it's still close to impossible to predict customer demand in a modern inventory environment with many SKUs. It's also a challenge to know exactly when resupply will come. To make matters more difficult, buying local beef directly from farmers means the whole animal is purchased, regardless if there is actually demand for each part of that animal.

*What is the effect of variability on our business?*

Finding customers is not easy and this is especially true for a value added product like source verified local beef. What happens when, after some hard work, there is finally a customer willing to buy a local product, but the right stock isn't available? Is it realistic to expect customers to

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<sup>8</sup> SKU: Stock Keeping Units

<sup>9</sup> Note: My experience with suppliers is that I rarely get it back earlier.

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simply say, “Sure, no problem, let me know when you get it back in, I’ll buy from you then.”<sup>10</sup>...

Or ... “No problem, I’ll take a different cut that you do have.” It is doubtful you’ll be able to build a vibrant business solely on patient customers. In order to cope with this reality, the choice is often made to manage inventory in a way that the right inventory is there no matter what.

When inventory is managed in a way that there are rarely out-of-stock situations, then it is required that there is enough stock to cover for demand variability and supply variability. When the problem of buying the whole beef from the farmer is tacked on, the problem gets magnified. Now there is inventory to satisfy unpredictable customer demand, unpredictable resupply, and also the rest of the animal that we probably don’t need. More than enough stock is held for the big sales months, but sometimes sales don’t materialize, customers are fickle, or the economy goes down the tubes. The result: The marketer is forced to freeze or mark down product and devote valuable cash, shelf space, and salesperson resources to products that give a lower contribution margin. What would happen if the warehouse could take that same cash, shelf space, and salesperson resource and devote them to full margin products? In this light, it’s not just the cost of holding inventory that hurts, but the opportunity cost of key warehouse resources.

Of course, the other option is not appealing either. What would happen if the choice is made to hold fewer inventories? First, this is attractive because more cash is released and there are less carrying costs to inventory<sup>11</sup>. That’s a positive, right? First, the unpredictable nature of customer demand might result in out of stock products. If there are out-of-stock products, then customers don’t get what they want when they want it. The result is disappointed customers and

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<sup>10</sup> It is true that some customers are amenable because they want local, grass-fed, organic, etc... However, are these customers the norm? What percentage of the market will give up convenience and access to product in order to buy this type of beef?

<sup>11</sup> Inventory Carrying Cost: The cost of interest, damage, or spoilage to products held in inventory.

lost potential sales. If this happens enough, the marketer gets a reputation for unreliability and disappointed customers turn into lost customers.

**Testing a Solution: What could help local value chains solve the dilemma between stocking more or stocking less?**

It is interesting to know the problem, but more important is a direction for a solution to the dilemma between stocking more and stocking less. Any solution must address the dilemma above. If the choice is made to stock more, sales are protected, but this requires more cash and it increases inventory carrying costs. If the choice is made to stock less, there are lower inventory costs and more cash, but sales to customers are jeopardized. Below are three low risk (requiring little or no investment) interventions that I propose tested to break this dilemma and improve local beef value chains.

**Intervention 1: Slaughter More Frequently and in Smaller Numbers**

Perhaps the first and most simple action to be taken is to slaughter more frequently and in smaller numbers. Remember, it is difficult to predict exactly what will be needed and it is difficult to predict exactly when our resupply will come. For beef marketers this causes either out of stock situations or mark-down situations. In this section I would like to examine what I think the logical result of slaughtering more frequently and in smaller numbers would be.

For example, assume that there is a beef marketing program that has demand for 40 beef per week, but 50 beef per week are killed to account for the variability experienced in both supply time and demand. Is it possible to reduce inventory in this situation? What will happen if the program scales down to the average demand of 40 beef per week? More cash comes out of the system and inventory carrying costs are less. However, inevitably Murphy<sup>12</sup> strikes and the

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<sup>12</sup> What can go wrong will go wrong. This is also known as variability.

resupply truck is late or there's an unexpected spike in restaurant demand. Reducing inventory will only lead to other problems.

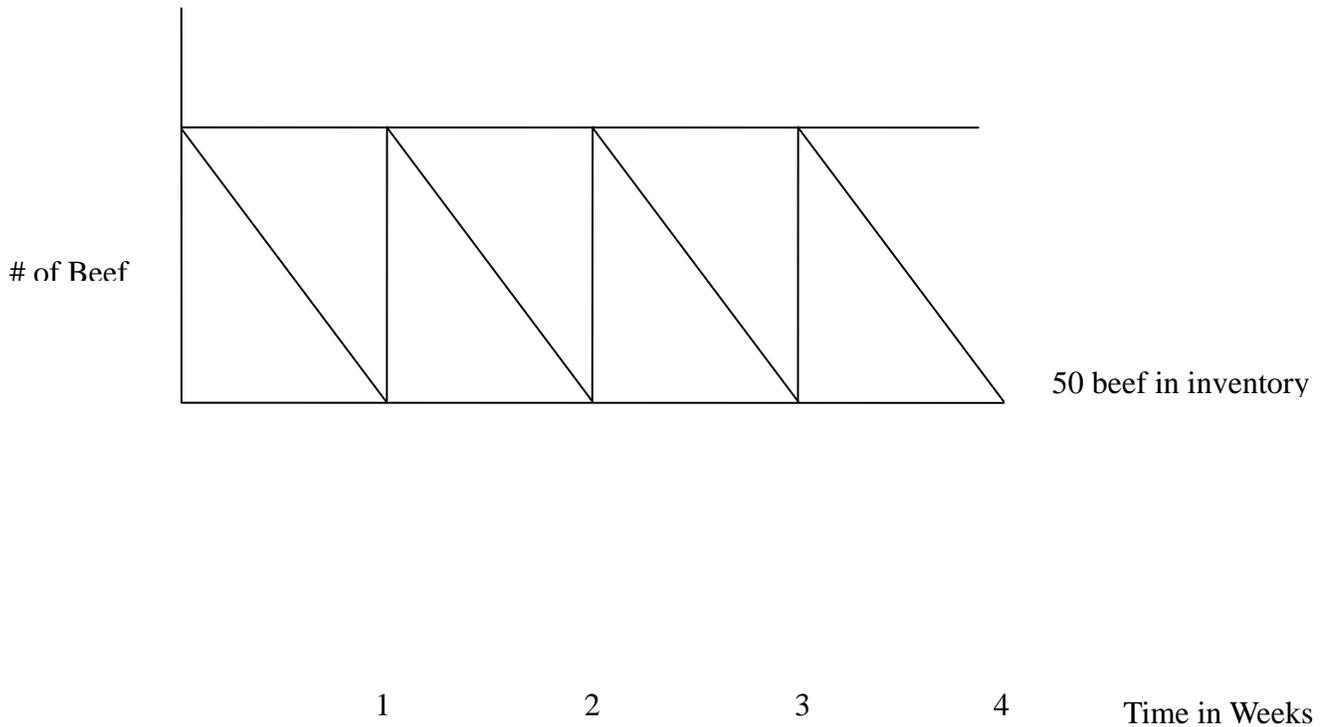
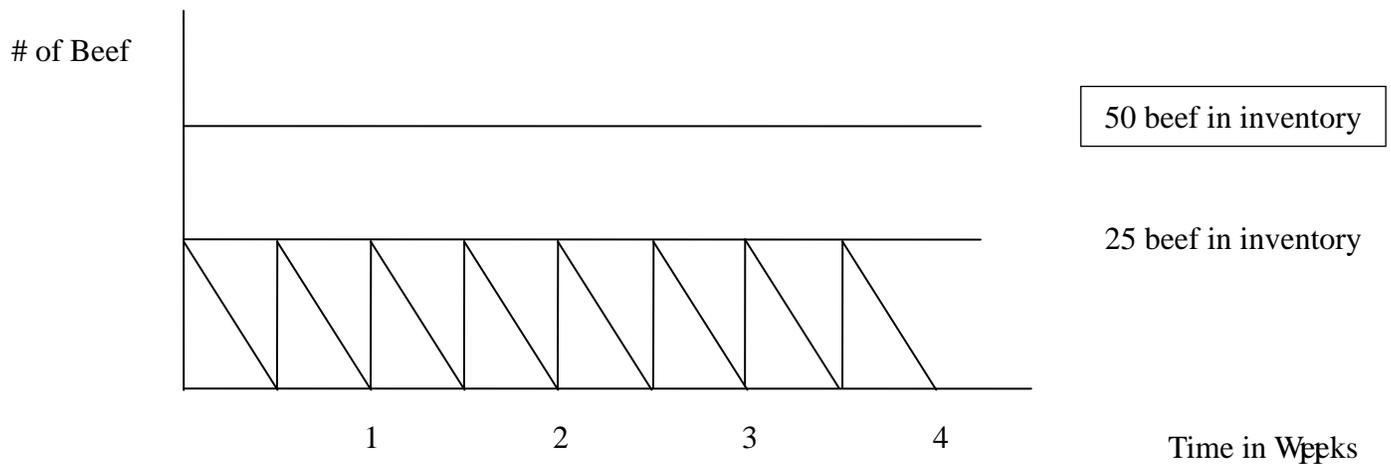


Figure 1: The stocking needs of a hypothetical beef system that kills once per week.

If beef continue to go to slaughter once a week, and customer service is important, it's clear that this system requires that *at least* 50 beef per week. However, what would happen if slaughter happened twice per week instead of once per week?



*Figure 2: The stocking needs of system that kills twice per week.<sup>13</sup>*

If slaughter increases by 100% there are a few logical results. First, it is possible to hold roughly half the physical inventory<sup>14</sup> without jeopardizing sales. This has positive implications for cash flow and inventory carrying costs. Why aren't sales jeopardized? The key is maintaining enough stock to service customers during the intervals between deliveries. When 50 beef were killed once per week, it was required to maintain enough stock to account for the needs of the entire week between deliveries. When slaughter happens twice as often, it's required to maintain only enough stock to maintain the needs of half the week between deliveries. Less stock is needed while still providing the excellent customer service that customers require. This effectively breaks the dilemma between stocking more and stocking less.

Decreases in physical inventory, while maintaining sales, allow improvement in cash flow and return on investment. Additionally, when physical inventory is held for shorter periods of time, perishable products sit shorter periods of time, reducing pressure to mark-down or freeze products. Lastly, once working capital is freed from inventory, it can be reallocated to other products that provide more contribution margin. This is especially important in a competitive environment where customers expect to have rapid delivery of increasingly more SKUs. Is it possible that beef programs could be expanded to generate more profits if only there was more

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<sup>13</sup> Notice that roughly half the inventory, thus cash, is needed to run this system.

<sup>14</sup> This is rough number. Because local value chains are forced to buy whole animals, I would expect that there are some parts of the animal sitting in inventory that are difficult to sell. Thus, I would expect that simply increasing the slaughter rate would not immediately remove some of the physical inventory we're holding and as such, it wouldn't be a straight halving of physical inventory.

working capital? Is it possible to stock another product that customers have been asking for, but was difficult to take on because of scarce resources?

**Could slaughtering more frequently work for my situation?**

It is common to point to the higher costs of slaughtering more often as a possible barrier. This is important to take into account. What will the extra costs be? First, transport costs could roughly double. Often great pains are taken to fill trucks to keep cost per beef lowest. Second, will there be higher costs at the packer<sup>15</sup> (or worse, packers won't work without minimum slaughter numbers) if we deliver in less than truckload quantities? The question of problems at the packer is difficult to answer without specifics, but often there are packers that will work with smaller beef distribution systems<sup>16</sup> especially if monthly or yearly volumes can be guaranteed. This can sometimes include additional set-up costs. Will the benefits outweigh the costs? Here's how to check the likely future effects of more frequent slaughter:

1. How much will costs increase with increased slaughter rates?
  - a. Higher transport?
  - b. Higher processing costs at the packer?
2. What will be the benefits?
  - a. If working capital is released back into the marketer's bank account, then cash can be allocated to expanding beef programs or other programs that customers have asked for. How much more could be sold with the extra working capital and shelf space? It would be reasonable to expect profits to increase by (increased sales –

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<sup>15</sup> This does not include small and very small inspected lockers (based on the previous FSIS definition), they generally like work spread out.

<sup>16</sup> In this case, I mean small is 50-100 beef a week.

increased unit variable costs<sup>17</sup>). It would also be reasonable expect return on investment to increase in proportion to the decreased cash per unit needed.

- b. If inventory is carried for shorter periods, is it reasonable to expect less interest costs, spoilage, markdowns, freezing, or damage due to holding inventory. Can this at least partially offset the cost of slaughtering more often?
3. What about the risks?
    - a. Is slaughtering more often risky? What would stop a marketer from returning to the old way of doing things if it didn't work out?
  4. Won't this involve uncomfortable change?
    - a. Isn't the current state of affairs already inadequate?

## **Intervention 2: Enter Retail Markets**

With local beef value chains, it is common to find that retail is an integral part of their business. This is because retailers often sell a wider variety of cuts than restaurant business. Unfortunately, it is easier to propose entry into retail markets than to actually do it. In order to have a chance to enter retail markets, it good to understand the challenges that many retailers face. The list of problems below might look familiar to a wholesale meat purveyor and this is not a coincidence. Both the wholesale and retail environment have a key trait in common: they hold physical products in different forms in order to provide for quick customer response and convenience. General retailer problems are as follows:

- 1) There is immense pressure to stock more products (breadth of selection is a major order winning criteria for retailers<sup>18</sup>).

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<sup>17</sup> Unit Variable Costs: The cost of a product that can be tied directly to a discrete unit of product. In meat, this might include processing, actual meat, and transport costs. This does not include labor, which cannot be tied to a discrete unit.

<sup>18</sup> Ketzenburg and Ferguson. 2008. Managing Slow Moving Perishables in the Grocery Industry. *Journal of Production and Operations Management*. 17. 513-521.

- 2) The retail business is getting increasingly competitive. (Wal-Mart; Target entry into the grocery business)
- 3) There are lost sales due to stock outs
- 4) There is immense pressure on margins.
- 5) There are cash limitations on increasing sales.
- 6) There are space limitations on increasing sales.
- 7) Groceries must give discounts on soon to spoil products.
- 8) It is difficult to forecast what will be demanded on any given day.

Our prospective retail customers feel the same conflict between stock more and stock less.

On one hand, they know that stocking more products in more sizes will give them more sales and make them more competitive. However, just as was discussed above in the warehouse environment, as the grocery manager attempts to forecast demand for a product section, product line, or an individual SKU, the ability to accurately forecast demand reduces further and further. In other words, having the right product in the right place at the right time becomes a nightmare for the grocery manager. When they choose to stock more products, then they experience negative consequences of spoilage or markdowns and wasting valuable cash and shelf space resources. It is important to note that spoilage of perishable items is increasing for the U.S. grocery industry and the value of spoilage can often represent two times the profits of the typical supermarket grocery.<sup>19</sup> For new products like local beef the conservatism of the grocery manager is heightened because they don't really know what the negative impacts of taking on another product will be.

On the other hand, when grocery managers try to minimize their inventory and the amount of SKUs they hold (and their costs) they end up with disappointed customers and lost sales opportunities. In an increasingly competitive grocery environment, this is not something most groceries can afford. When we look at problems from the retailer's point of view, it becomes easier to understand that the cost of stocking another product is not just the price per unit, but a

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<sup>19</sup> Ketzenburg and Ferguson. 2008. Managing Slow Moving Perishables in the Grocery Industry. *Journal of Production and Operations Management*. 17. 513-521.

myriad of other risks as well. It also becomes easier to understand why grocery managers are so conservative with local foods or other new products.

In order to add significant value to retail stores, the first thing to be done is ask: What will effectively aid a prospective grocery customer in solving their key problem, mainly the conflict between stocking more or stocking less. Not surprisingly, the answer lies in more frequent deliveries. What kind of offer can we make to help them?

1. Try offering more frequent (daily) deliveries and replenish up to previously agreed upon<sup>20</sup> inventory levels. More deliveries in smaller quantities means lower inventory. Fewer inventories mean more cash and less inventory carrying costs. More cash allows groceries to stock more products. However, with frequent replenishment, our grocery customer doesn't run into out-of-stock situations that result in lost sales opportunities and leave customers disappointed (or going to a competitor).
2. Offer to take back stock that won't sell. Daily delivery is not always enough to help grocery managers get over the valid fear of inventory loss or markdown. When grocery managers feel secure that they won't be left holding the bag for a new local beef program, their conservatism around new products can be overcome. If supplier replenishes only what was consumed the day before, they won't get caught taking back too much stock.

### **Could daily delivery work for me?**

Many individuals object to daily delivery because they are afraid operating costs will increase substantially. First, how much more will it cost a business to deliver more frequently? Are there already trucks making deliveries? If so, is it possible to add one or two daily stops? Do trucks sit idle on some days? If there are already trucks and truck drivers, increasing delivery

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<sup>20</sup> Work with the grocery to find a stocking level that both protects sales without taking on too much inventory.

frequency often only costs the extra gas to make a few extra deliveries and some rearranging of delivery schedules.

In larger businesses, there might also be objections from warehouse personnel or warehouse managers. If there are small daily deliveries, then picking and loading orders can become a headache. This stems from the fact that case or carton quantities often need to be opened and combined with other small orders. When picking and loading orders is a problem, a small staging area in the warehouse to support small sub-case or sub-carton quantities can sometimes be used to avoid sending valuable personnel through the whole warehouse to find what seems to be a trivial order.

### **Intervention 3: Promoting a Value Added Ground Beef Program**

Finally, when we buy direct from the farmer, we are often forced into buying parts of the animal that we might not have immediate demand for. The hope is that demand will materialize before the freeze date, but sometimes it doesn't. The result: Cash, shelf space, and salesperson attention are used on products that need to be marked down. The other problem is that from week to week, it's difficult to know which products aren't needed, but will still be forced into inventory. Because of this, it is helpful to have a flexible avenue for multiple cuts of meat to move quickly through our warehouse. In essence, the goal is to sell unneeded inventory quickly, but at a sufficient price, in order to get money back out and avoid the opportunity cost that markdowns or freezing meat incurs. This is probably the most difficult intervention to enact because the very commodity nature of ground beef makes value added very difficult to justify to potential volume buyers.

Where value added ground beef programs have been successful is when private companies partner with organizations that are interested in issues such as supporting the local economy, humane production standards, health benefits, etc... For example, Oregon Country

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Natural Beef (\$50 million dollars in total sales) sells 6% of its beef through a value added local fast food chain that promotes local production and humane production standards. This market helps move a lot of trim and parts of the animal that don't have buyers. One small beef company (\$1.2 million in total sales) sells approximately 10% of its meat through a value added ground beef program to local colleges where consumers are interested in the buy local buy fresh movement in their region. This is often done through appealing to stakeholders on based on the value of buying local and supporting the community, state, or region where the local ground beef program is located.

### **Section 3: Adding Value at the Farm Gate**

Livestock producers generally feel that much of the risk settles at the farm gate. Weather, volatile feed markets, and volatile commodity prices all lead to a level of unpredictability that is difficult for livestock producers to navigate while other parts of the value chain are insulated from these problems (at least the weather). The traditional solution to improving agriculture has been to work hard to cut costs (feed, labor, etc...) or get bigger. Cutting costs has worked to some extent, but for many producers, the limits of cost cutting are being tested. Often, lower costs mean investment in new equipment, but these investments come with their own problems and risks. Getting bigger has worked for some producers, but this can often come with the risk of large levels of debt that may or may not be justified, especially with the possibility of large and unpredictable swings in feed and beef market prices. There is also evidence that getting bigger is not the panacea for improving operation efficiency<sup>21</sup>.

Today folks are trying to develop new value added markets that include local, anti-biotic free, grassfed, organic, etc... While these have proved viable, many businesses that have tried

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<sup>21</sup> Hawkes, J. 2011. *Value Chain Analysis*. New Mexico State University: Department of Extension and Animal Science.

to market this value added beef have not experienced success. In the sections above, some of the problems have been highlighted.

When buyers have decided to have a local branded beef program and must partner directly with farmers for production, then they must often plan production more than a year in the future. Planning more than a year into the future is often a difficult prospect because it is impossible to know how many beef need to be ready on any given day or week throughout the year (we have variability in demand). If buyers are able to buy beef when and in the amounts that they need, they are able to reduce inventory, increase cash flow, reduce costs due to spoilage, and minimize out of stock situations. This represents an opportunity for added value not only in production practice (antibiotic free, organic, and grass-fed) but an opportunity to improve the value chain as a whole. When it is possible to tie actions at the farm gate to improved profitability downstream<sup>22</sup> for the marketer and the grocery store, then price premiums are justified. Producers who can calve more often can minimize additional time on feed and lost capacity, but still offer buyers the same amount of flexibility. The key is providing beef when buyers need it in the numbers they need. If this is possible, then it is possible to ask for price premiums for the value provided.

*Which kind of production systems can we test to add value in local supply chains<sup>23</sup>?*

- 1) Try calving more frequently.
  - a. Producers can calve more frequently to have animals ready on a weekly or monthly basis, while minimizing the amount of time that each individual animal needs to be fed and housed. Sometimes calving more frequently can also reduce

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<sup>22</sup> Remember the “Beef Marketer’s Dilemma”. Adding value means helping buyers who buy and hold inventory to minimize their inventory while still maintaining good product availability.

<sup>23</sup> Local Supply Chain: When buyers who hold inventory are dedicated to buying whole beef from local producers.

stress level during breeding and calving seasons. Instead of trying to get all cows bred at one time and calving all at one time, producers can spread this work out and focus more effectively on getting fewer animals bred or calved. The ability to focus on getting fewer cows bred at one time sometimes has the effect of reducing the amount of open cows and reduces cull rates. This results in opportunities for more heifer income. Calving fewer animals at one time can also have the effect of healthier calves due to increased focus by the producer.

*b. Why is this important?*

i. When production is designed to calve in small batches, it makes it possible to have a steady supply for beef buyers. This also minimizes the amount of inventory in the system at any one time. Calving in small batches makes it possible for producers to provide services without increasing inventory (holding beef on the hoof appreciably longer).

*c. What are the negatives?*

i. If producers calve frequently and throughout the year, then it might mean that it is required to feed and calf animals during seasons that are not conducive to animal feeding. This could mean higher feed costs for some of the animal (feeding heavier animals off season).

ii. One solution to this problem of feeding animals off season is to look for opportunities for small producers to cooperate. For example, there is year round grass in Southern parts of the New Mexico, where winter pasture and finishing is more effective/possible, but severe heat in that same area makes summer finishing more challenging. Meanwhile,

Northern, cooler locations are favored producing summer pasture and fall finishing. There may be ways for New Mexico producers to cooperate and solve these problems.

### **Could calving more frequently and in smaller batches work for producers in New Mexico?**

There are some simple ways to check. First, how important is it for your buyer to have availability in small quantities? If it is important (and it should be for any buyer that holds physical inventory and is not buying commodity beef), then guaranteeing availability is a way to justify premiums. Here it is a matter of simple math. Are the premiums garnered enough to offset the increased feed costs that finishing off season will incur? Even better, is it possible to cooperate with other producers to feed animals in different parts of the state. If the answer is yes, then this is probably a good idea. Calving more frequently does not require capital investment and therefore much less risky than many other capital intensive farm improvement initiatives.

### **From Farm Gate to Consumer: Putting the Supply Chain Together**

The basic concept of a value chain is adopting the mentality of, “as long as the end customer hasn’t bought, nothing has been sold.”<sup>24</sup> Even if the producer and marketer have sold a product, but the consumer at the restaurant or the grocery store has not consumed, then only cash (and risk) has been exchanged by value chain participants. In the current mode of operation the basic assumption is this: If costs are minimized for an individual member in the value chain, then profits are maximized for that particular piece of the chain. However, as shown in the marketing section, there are other factors driving costs. Successful beef value chains need to be able to increase sales, decrease inventories, while maintaining operating expenses. This requires

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<sup>24</sup> Goldratt, Eli. 2009. *Isn't It Obvious*. Great Barrington, MA: North River Press.

the entire value chain to begin producing, slaughtering, and selling animals in smaller batches. In reality, local beef value chains have tremendous advantages if they are able to capitalize on their close proximity to improve speed to market and reduce the need for inventory across the value chain.

## **Conclusion**

Non-commodity meat value chains, where marketers take physical possession of inventory, tend to have two key problems:

1. They are often forced to buy the whole animal, regardless of whether they actually need each part of the animal.
2. They experience variability in both re-supply and customer demand which leads to either mark-downs or product shortages. Both mark downs and product shortages end up costing business profitability, return on investment, and cash flow.

This paper proposes that we test three solutions to these problems:

1. Slaughter more frequently and in smaller numbers to expose working capital, decrease inventory exposure, and increase sales by reallocating working capital to other products.
2. Enter retail markets to utilize a wider variety of cuts.
3. Develop a value added ground beef program to rapidly utilize cuts forced into stock by whole animal purchasing.
4. Ask producers to calf more frequently and throughout the year.

As a result of discussion and review of preliminary versions of the report, BII-NM and this investigator see additional barriers to success that are beyond the current scope. Changes in calving timing, duration of calf/beef cow ownership, frequency of slaughter, all point to cash flow impacts throughout the value chain. Further research should focus on specifically

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identifying how smaller batches will impact cash flow, return on investment, and profitability for producers and marketers. Research should also be directed at problems that many producers and marketers have with attaining financing. Questions should center on: How can producers and marketers participating in local markets find financing or release cash out of their operations without jeopardizing profitability? Transportation cost and function is another area that could impact the effectiveness of the interventions recommended in this report. There is a need to review this sector, and consider ways to support this function, so vital to New Mexico ranchers and value chain members.



# Challenges and Opportunities: A Report on the New Mexico Meat Processing Industry

## Executive Summary

In the context of growing demand for locally produced meat and declining capacity to process this meat, the Beef Industry Improvement—NM (BII-NM) initiative conducted a survey of 10 meat processors in the state. The survey and other background research found that:

- Processing capacity has declined since the USDA took over the state inspection program in 2007.
- There are only 7 USDA certified slaughter/processing plants in the state and only four of them process cattle.
- Producers in the state must travel as far as 400 miles to reach the nearest USDA certified processing plant.
- Currently less than one half of one percent of cattle raised for beef in the state are processed in the state (approximately 1,320 out of over 450,000).
- Under federal inspection, both USDA certified and custom plants face significant regulatory barriers that inhibit plant expansion and profitability.
- Current USDA efforts to support small scale meat plants are not having a significant impact on the ground in New Mexico.

New Mexico Processor Survey Summary of Results	
Average Facility Age	33.4 years
Inspection Status:	
USDA	5
Custom	7
Exempt	1
Average Annual Revenues	> \$500,000
Av # of Cattle Processed	10-25/week
Price/Lb Processing Fee	\$0.58 (av)
Other Animals Processed (in order of prevalence)	Sheep, Turkeys, Hogs, Goats, Bison
Interested in Expanding	
Yes	4
No	6
Barriers Faced (in order of severity)	Regulations, Financing, Labor, Skills/Knowledge

Based on these results, the action most likely to lower the barriers for entry for new plants and stave off the current decline of capacity in the state would be **to make a differentiation in the way regulations are created and enforced for small plants versus large plants or: that reflects the scope and scale of operation, and risks associated with that scope and scale.** This change would need to be reinforced by building a stronger support system for small plants including technical and financial assistance both designed for smaller plants and that take into account regional differences. Without these changes, New Mexico’s meat and other agricultural producers will continue to fall behind local demand for their product, and they and the rural communities they support will lose out on this essential economic development opportunity.

The United States Department of Agriculture recently released a study documenting existing gaps in small-scale meat processing. The study shows nine of New Mexico's 33 counties have more than 150 small-scale cattle producers but no USDA certified processing facility. In fact, only seven New Mexico processors hold USDA certification and three of the seven do not regularly process cattle. Because the USDA closed down the state inspection program, these four facilities are the only processing options for the 8,208 ranchers in the state. And, while New Mexico has a small population, it has a large land mass, signifying that with only four USDA processors many producers are between 150 and 400 miles from the nearest facility.

New Mexico ranchers have not always faced a shortfall in meat processing capacity, but there has been a steady decline accelerated by the 2007 closure of the state inspection program. While this follows the national trend of consolidation in the meat packing industry, there is a disconnect in the fact that demand for locally produced and processed meat appears to be growing as fast as the local processing sector is declining. For example, the New Mexico Beef Council conducted a survey of over 4,500 state fair attendees and found that 97% would prefer to eat beef produced in New Mexico and 81% were willing to pay at least 5% more for local beef. Similarly, the first topic raised by a group of Santa Fe restaurateurs in a meeting conducted by the non-profit Santa Fe Alliance was their difficulty in getting local beef. Several chefs explained that local ranchers they had purchased from explained that their high prices and availability challenges were due to the lack of processing capacity.

In 2007, the New Mexico Economic Development Department received so many requests from ranchers for funds to build processing plants, that they initiated a strategic planning process to identify whether processing was essential to improving industry profits. This two-year planning process, which involved over 300 ranchers, agency people, agricultural service providers and other industry people, found that while increasing processing capacity would not alone "save" the industry, it would indeed be a critical part of a larger strategy to increase rancher profitability.<sup>1</sup>

This finding concurs with research at the national scale. In a news release regarding the study described above, United States Secretary of Agriculture is cited as saying:

"To support consumer demand for locally produced agricultural products, meat producers need to have access to local or regional slaughter facilities, and the study we are releasing today shows that there is often a shortage of facilities needed to bring food to market...The 'Know Your Farmer, Know Your Food' initiative is working to address various shortcomings in the food supply chain on behalf of our country's producers and consumers. If there is a stronger, closer link between production and consumption, there is often an economic benefit."<sup>2</sup>

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<sup>1</sup> The strategic planning process became the Beef Industry Improvement-NM initiative, a collaboration among key industry stakeholder groups.

<sup>2</sup> USDA News Release, May 25, 2010 "USDA Identifies Gaps, Releases Maps Which Detail U.S. Local Meat Processing Facilities," accessed at <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2010/05/0284.xml>

Similarly, in 2009, the non-profit organization Food and Water Watch released a study entitled “Where is the Local Beef,” which, based on comprehensive consumer research and interviews with meat processors and producers found that while consumer demand for locally produced meat is growing, the capacity to process that meat is declining. In their words, “The long, slow demise of local small slaughter and processing operations is now preventing farmers and ranchers from fully satisfying rising consumer demand for meat from sustainably raised livestock.”<sup>3</sup>

Market economics would suggest that in a situation like this where demand so significantly outweighs supply, new firms would enter the market and existing firms would expand. While there are a few examples of demand-driven expansion nationwide, the processing capacity in New Mexico has remained steady or even declined over the last several years. This indicates that there are barriers to entry/expansion that are stronger than the incentives. In order to identify these barriers, the Beef Industry Improvement initiative, a collaboration of key industry stakeholders, contracted New Mexico State University agricultural economists to interview current processors about their experience in the industry.

Ten processors were interviewed for the study. Of them, five are currently USDA certified, one is fully exempt (small-scale poultry processing only) and four solely do custom processing. Prior to the USDA takeover of the state inspection program in 2007, all ten of these processors were able to process livestock for sale within the state and six were able to sell outside the state. Currently, only six are able to sell within or beyond the state. When the takeover occurred, only one plant moved to USDA inspection, and at the same time one plant stopped being USDA certified.

Only one new processing plant (which did not participate in this survey) has been built in the last 14 years, and it is a mobile processing unit. While some of the owners have only run the business for five years, the average facility age is 33 years old. Annual sales for these facilities range from as low as \$25-\$75,000 to above \$500,000. In total, we estimate that these 10 plants slaughter 1,320 cows per year, less than one third of one percent of the cows New Mexico ranchers raise for beef each year, and about one half of one percent of the beef consumed in the state annually.

In addition to providing basic information about their businesses, the processors were asked whether they faced any barriers related to financial, regulatory, personnel, or skill issues, and if so, to what extent those barriers affected them. By far, the most common and most severe barrier cited was regulatory barriers. Eight out of 10 processors indicated that regulations presented a barrier to their business and on a scale of 1 to 5 (one signifying little or

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<sup>3</sup> Food and Water Watch. *Where's the Local Beef?* June 2009. [www.foodandwaterwatch.org](http://www.foodandwaterwatch.org), p.iv

no barrier, five signifying high barrier), the average rating was 4.13. When given the opportunity to comment, processors responded:

- *Regulations cause multiple challenges. The regulations put his other plants out of business due to environmental issues. The regulations we face in the processing industry make doing business miserable.*
- *Lots of plant improvements required by the government and they really have no regard for the strain it puts on you financially. They really don't care if they put the small guys out of business.*
- *The regulations are getting stricter every day. Something new regarding HACCP comes up all the time.*
- *Inspectors have the freedom to come in and throw up a barrier on any part of the plant. The inspectors don't know how to deal with small processors and even made some mistakes on evaluation of the plant by writing them up for things that didn't apply to them because of their small size.*
- *Regulations prohibit expansion in certain areas. For example, we could not process any more cattle per week, even though we would like to, because we are not allowed to put any more beef in our coolers.*
- *There is constant harassment to small plants. The inspectors treat small plants just like the huge plants. It doesn't matter how extremely careful and clean you are, it is never good enough. Anytime there is a food outbreak, the government comes down like a ton of bricks on everyone rather than the plant that is responsible, which is almost always the huge plants. This means more money and costs.*
- *The FSIS has no recognition of small plants vs. large plants. Most of the regulations are set up for large plants causing small plants to face the same high costs and puts them at a disadvantage. In reality, there should two sets of regulations- one for large plants, and one for small plants.*
- *Regulations are difficult to deal with in all areas.*

Financial issues also presented a challenge to some processors. Five out of 10 noted it as a barrier and the average severity was 4.0. Three processors noted that the conventional banking industry was difficult to deal with and much more so since 2008. It appears that without loans from friends/family and personal savings, it would be difficult to start or purchase a processing business. One processor also mentioned that regulatory compliance imposed a significant financial burden. This has been well documented in the Food and Water Watch study:

Even before the final HACCP rule was published in 1996, two years before going into effect, FSIS acknowledged, "small plants will be disproportionately affected by rule-related costs." The General Accounting Office determined that this would include 2,234 federal facilities and 2,890 state-inspected facilities. The cost of implementing HACCP at very small plants making few products was estimated to be roughly \$12,000 to \$13,000 for initial implementation and \$6,000 to \$7,000 each year thereafter. The cost was 15 percent higher for small operations that combined slaughter and processing.

However, these costs were underestimated. USDA's Economic Research Service reported in 2004 that "[t]he industry's annual investments in food safety measures are much higher than the cost estimates made by USDA's [FSIS] prior to enactment of the regulation." Furthermore, for a number of reasons

discussed below, the costs per pound for changes necessary to comply with the HACCP regulation were two to six times higher for the smallest plants than for the largest operations.<sup>4</sup>

New Mexico processors indicated that they had to change their HACCP plans often: “once a month,” or “every time an inspector comes,” or “constantly.” This was true of both exempt and USDA certified plants. Processors also commented that the feeling they got from Food Safety Inspection Service (FSIS) inspectors was that they “don’t have a clue about anything involving the meat processing business. They don’t care if we stay in business or not.” They also reported that when FSIS inspectors noted a “non-compliance,” they refused to provide guidance about how to resolve the issue. One processor stated, “They are always getting us for the tiny things. We need to have more time to fix things without getting written up for non-compliance.”

Based on feedback like this not just in the survey but through other venues, BII-NM Executive Committee members approached representatives of FSIS to try to better understand their agency and whether this understanding could help processors have better interactions with inspectors and better inspection results. It was explained to BII-NM representatives that the directive of FSIS local and regional offices was to regulate, not to educate, and that processors should not expect inspectors to provide any information besides statements of non-compliance. They also explained that the FSIS national office in Washington DC provides many educational programs and outreach efforts to assist processors. Indeed, the FSIS has recently created a special “help desk” for small processors, and published the study described above. However, it appears from the survey that these programs are having little impact on the ground, indicating that there is a discrepancy between the intended results of current FSIS stated policies and the actual results.

This discrepancy also seems to be the case for the programs of Rural Development. The 2008 Farm Bill included numerous provisions designed to support the development of local food systems, including special priorities in various Rural Development grant programs for projects that seek to create local food system businesses. One example is the Business and Industry Loan Guarantee program, which now has a set-aside for local food system businesses. Unfortunately, despite the fact that numerous processors indicated that obtaining capital for expansion was a challenge, there have been no applications to this program for processors, or indeed any other local food system businesses. There have been reports that even with the loan guarantees, banks will not lend to producers, processors or other low-margin food businesses. Similarly, the Value-Added Producer Grant includes food destined for local sale as a “value-added” product, yet in recent years the only successful application to this grant program was a peanut processor in the southeast corner of the state. (*we just got awarded 4 VAPGs...*) Experts in these grant programs both within and outside the agency have commented that these programs were designed for conditions in mid-western states where there is already a strong support structure for agribusiness. States like New Mexico, however, lack the organizational capacity and matching financial resources to present compelling applications for many USDA programs.

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<sup>4</sup> Food and Water Watch, p.38

Thus, while the commitment to support local food systems and in particular small-scale meat processing plants is being clearly stated, it appears that further changes in policy and practice need to be made in order to put that commitment into action. Based on the results of both national research and the New Mexico Meat Processor Survey, the action most likely to lower the barriers for entry for new plants and stave off the current decline of capacity in the state would be to make a differentiation in the way regulations are created and enforced for small plants versus large plants or: that reflects the scope and scale of operation, and risks associated with that scope and scale. This change would need to be reinforced by building a stronger support system for small plants including technical and financial assistance both designed for smaller plants and that take into account regional differences. Without these changes, New Mexico's meat and other agricultural producers will continue to fall behind local demand for their product, and they and the rural communities they support will lose out on this essential economic development opportunity.