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Final Report: **Natural Livestock Feasibility Study**

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I. Executive summary

Natural and organic meat sales have grown significantly at the national level over the past five years, as the graph indicates. However, this growth has been built on a very small base of total alternative livestock product sales. Even with significant market growth at the retail level, the livestock producer may have limited ability to capture a price premium in these markets. Often, meeting the demands of new markets raises production costs, and it is not well known whether livestock producers can capture the value that these new markets suggest.

This feasibility study is primarily focused on the question of whether it is feasible to develop alternative markets for livestock products in Inyo and Mono counties that can add value to the current 30,000-plus calves and 21,000-plus lambs and sheep produced there annually.¹

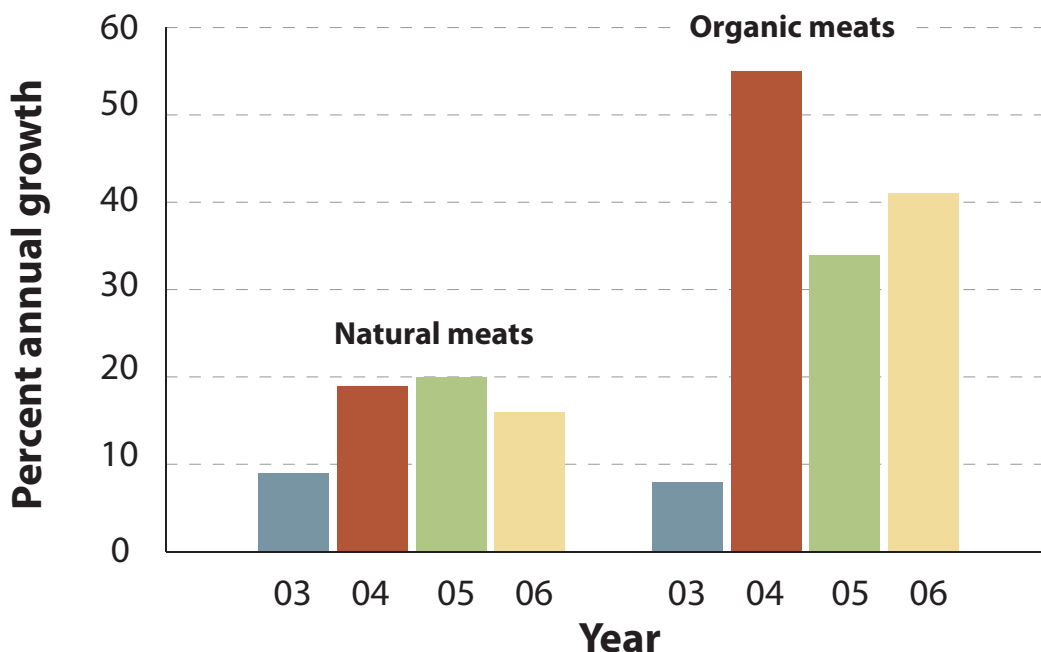
This report outlines the results of efforts by

NCAT to both educate and gather information from potential partners to determine the feasibility of developing alternative markets for the livestock (mostly beef) industry in Inyo and Mono counties. To a lesser extent NCAT and partners also explored the broader development of a regional food system based on alternative products from local livestock.

The method for accomplishing these tasks was to hold two interactive workshops to both educate potential partners on what it would take to create an alternative market for livestock and to survey livestock producers and merchants of fresh livestock products, such as restaurants, grocery stores and business that re-sell livestock products. With the great help of the agricultural commissioners and the Inyo County administrators' office we sent out 60 surveys to livestock producers and 282 to merchants. We had a return rate of 10 producer surveys (17 percent return

Figure 1. Fattening up nicely

Sales of organic and natural meats have grown rapidly in recent years. Annual changes are for the 52 weeks that ended in April each year.



Figures are for prepackaged foods with organic or natural labels and sold at major food, drug or mass merchandisers, excluding Wal-Mart. Excludes freshly cut meat.

Source: AC Nielsen LabelTrends

rate) and 28 merchant surveys (10 percent return rate).²

NCAT's determination is that the development of a regional and alternative livestock market is NOT feasible at this time. Without further educational and research efforts, along with greater willingness of livestock producers and local merchants to seriously take increased leadership and ownership in such efforts, further development of a viable alternative fresh livestock product industry is not possible.

II. Labeling

Lauren Gwin — in a recent unpublished dissertation at the University of California, Berkeley — gives a concise overview of the current conventional livestock market that in large part defines the current situation in Inyo and Mono counties:

*"In 2005 the United States turned 33 million cattle into 25.6 billion pounds of beef. The estimated retail value of the U.S. beef industry was \$78 billion. The beef industry is shaped like an hourglass. At the top are hundreds of thousands of farms and ranches across the country that raise millions of beef calves. Near the middle of the hourglass are approximately 2,000 feedlots, where the cattle are fattened on high-energy feed for the last few months of their lives. In the narrow neck of the hourglass are the even fewer slaughter and processing plants, most of them owned by one of four companies, and the small number of retail conglomerates that own a large proportion of the outlets where beef is sold. At the bottom of the hourglass are the millions of consumers who buy that beef."*³

One way to view the alternative market for livestock is to view it as a separate system of marketing, as well as production, that differentiates livestock products from this standard conventional model. Labeling and branding offer significant ways to create this differentiation. The primary labels that are in use for this purpose are: *grass-finished* or *grass-fed*⁴, *natural* and *organic*. To a lesser extent such additional labels as *sustainable*, *growth hormone free*, *antibiotic free*, *cruelty free* and *pasture raised* have also been used. However, only grass-finished and organic labels have any degree of national recognition. A new and as yet unfinished voluntary label claim that may be available soon is *naturally raised*; however, this

labeling terminology is being highly criticized by some industry and consumer organizations because it has great potential to confuse consumers. The confusion results from similarity to the general label claim of *natural* that is already given to processed livestock products. To illustrate, *natural bologna* refers to how the meat is processed into bologna and not the naturalness of the meat going into the bologna. The proposed *naturally raised* standard is supposed to function as what might be the equivalent of a combined antibiotic- and growth hormone-free label.

Perhaps the real confusion for producers and consumers with labeling comes from what are termed label claims. Private parties are free to create any label claim they wish, and can ask the U. S. Department of Agriculture (USDA) for authorization of a label claim. However, such label claims require ample documentation of the truth of the claim before it is granted. Use of such a claim also opens the user to possible litigation if a competitor wishes to contest the truthfulness of the claim. Also, private parties can have their claims authenticated by an unbiased third-party under a USDA program called process-verified. This USDA-sanctioned label is not often used by alternative marketers of livestock because of expense and complex paperwork demands for application. For further information on the process-verified label claim process, visit <http://archive.gipsa.usda.gov/programsfgis/inspwgh/pvp/pvp.htm>.

Finally, trade associations may create either trademarks or label claims that they can attach to the product for those who are members of their association. A good example of this approach to product differentiation is a label created by the American Grassfed Association (AGA). Learn more about the label at www.americangrassfed.org.

This association trademark is for the express use of those who are members of the AGA. It is a third-party verified trademark and that verification is done by the Food Alliance, which has also developed a broad third-party label for sustainably produced foods called Food Alliance Certified. Again, this label claim has to be approved by the USDA. Although this is a trade association trademark, any private entity could create a similar individual trademark. For more information

²Not all questions were answered on surveys, we used as much of the data as possible.

³Gwin, L. 2006. *New Pastures, New Food: Building Viable Alternatives to Conventional Beef*, unpublished Dissertation, University of California, Berkeley.

⁴ I use the term grass finished. Grass finished means the animal was almost exclusively grazed on pasture until removal for slaughter.

on trademarks see www.uspto.gov/#.

Grass finished

Grass finished is now defined under a voluntary label claim administered by the USDA. Information on this claim is provided in the **Appendix**. The rule requires diets for ruminant animals — cattle, sheep, goats and bison, but not pigs — to be derived solely from forage. It also requires that animals not be fed grain or grain by-products and calls for continuous access to pasture during the growing season. Being a voluntary standard, however, it does not technically prevent a seller of a livestock product from claiming grass finished on the label if the USDA accepts the label claim. However, since the enactment of the rule, it would be doubtful that any new grass-finished label claim applications would be accepted without meeting the USDA definition.

Organic

The use of a claim to be organically produced is strictly controlled by the federal government. The agency that is in charge of this label is the National Organic Program (NOP). The main contact for information on organic standards is their Web site at www.ams.usda.gov/nop/.

It is important to note that the organic label is also a third-party verified claim and those livestock producers who wish to use this label must be inspected annually by an accredited certifier, develop an organic systems plan and in general maintain extensive production and sales records. NCAT, through its ATTRA project, provides a great deal of information to assist with organic certification. For more information, visit www.attra.ncat.org. We disseminated over 200 publications on this topic to livestock producers and merchants who attended our workshop in Bishop, Calif.

Natural

With the exception of a possible new USDA voluntary label claim called naturally raised as mentioned above, natural is a label claim that is largely meaningless at least as it refers to how the livestock is produced. While individual sellers of livestock products may use a natural claim

on their labels it could either refer to the level of processing of the product or more typically implies some implication that the livestock were raised free from the use of antibiotics or growth hormones. Unfortunately, these are not usually third-party verified labels meaning that the consumer must ultimately trust the seller as to the truth of the claim. In Inyo and Mono counties there already has been the development of a natural beef product associated with the Harris Beef brand. In this case it is difficult to tell whether the Harris Beef brand or the separate natural label is more important to the development and success of this product.

Combination labels

Within the confines of the general laws of label claims and trademarks, it is possible that producers and sellers of livestock products could combine label claims. One could have a New York strip steak sold as natural, grass finished and organic. Indeed, there are several livestock producers who are developing an organic grass-finished livestock product market niche.

Eastern Sierra Beef

Throughout the workshops and discussions with Inyo and Mono county livestock producers and merchants there was interest in the creation of an Eastern Sierra Beef label. This would be a possibility, provided the trademark or brand is not already owned by some other entity.

III. Infrastructure needs assessment

The development of alternative markets for livestock has been hampered by the lack of adequate processing facilities. Indeed, this is perhaps the single greatest barrier to the development of alternative markets for livestock products nationwide. Inyo and Mono counties do not have existing facilities adequate for processing significant numbers of livestock. In addition, there are no larger-scale feedlots available in the area that could be used to feed-out significant numbers of yearling beef to slaughter weights. This is a serious handicap in developing an alternative market.

There have been three possible scenarios discussed by participants in the two NCAT work-

shops and evaluated by survey respondents with regard to these infrastructure deficiencies: mobile slaughtering alone; mobile slaughtering with an associated cut-and-wrap facility; or a stand-alone processing facility that would both slaughter and cut and wrap livestock products in one location. As part of our survey we specifically asked livestock producers which of these alternatives they preferred. The results are presented in **Table 1** and **2**.

| Table 1. Processing facilities wanted | |
|--|-----------|
| Mobile | 1 |
| Stationary | 7 |
| Mobile and cut and wrap | 2 |
| Total responses | 10 |

| Table 2. Processing and marketing functions needed | |
|---|-----------|
| Slaughtering | 6 |
| Aging | 4 |
| Packing and wrapping | 5 |
| Marketing | 3 |
| Total responses | 18 |

Clearly, of those responding, a stationary slaughtering facility is preferred. Also, respondents want the facility to provide the services of slaughter, aging and packaging. The mobile and cut-and-wrap option was highly discussed at both workshops, so it is interesting to see such a low interest in this alternative by survey respondents. Interestingly, Deb Garrison of Central Coast Grown in San Luis Obispo, Calif., who spoke at one workshop, is very near opening a mobile slaughter and cut-and-wrap facility that will be the first of its kind in the state of California and is one of only six that are operational in the United States. Contact www.nichemeatprocessing.com/goal.html for more information on mobile slaughtering and cut-and-wrap facilities.

Besides moderate interest, the issue of providing needed processing infrastructure of course relates to cost and production capacity needs. New modern stationary livestock processing facilities are very costly and require great effort to build.

Figure 1, adapted from an excellent resource on

how to build, expand or upgrade a processing facility, gives a very graphic picture of the complexity of such an effort.⁵

Costs of a stationary facility depend highly on the number of animals needed to process in total and whether the facility can be sized to account for maximal use throughout the year. Most studies support large economies of scale for processing facilities and assert that the decline in the number of moderate and small processing facilities is evidence of this economy of scale.⁶ However, these studies are in relation to the commodity livestock industry and do not take into account new niche and more valuable livestock market opportunities.

For this report we concentrated our research efforts on mobile slaughtering with an associated cut and wrap facility, to get some sense of the cost investment involved in serving an alternative livestock industry in the Eastern Sierras. In our estimation a stationary livestock facility would cost more than the combined model of mobile slaughtering and cut and wrap facility. While a future analysis would have to be undertaken to get specific estimates for these alternatives, review of existing studies on the subject provides a good starting point.

Besides its high cost, the other difficulty with a stationary facility would be the transportation costs of getting animals to the facility and the costs associated with holding them for periods of time until slaughter. The mobile slaughter and cut-and-wrap facility would eliminate the need to transport animals to slaughter, but would still entail getting the mobile unit to individual farms on a regular schedule. Mobile slaughtering also creates the need to deal with the issues of offal disposal on-farm and the questionable ability of livestock producers to hold a set amount of animals in a corral to be slaughtered on the ranch.

Producers were asked about the last two issues in the producers survey. Eight of 10 respondents said they had the capacity to corral animals temporarily and five of eight respondents said they could handle offal waste on farm. However, discussions with county environmental officials — and the experience of others in the state of California — raise the issue of on-ranch offal disposal as a potential problem.

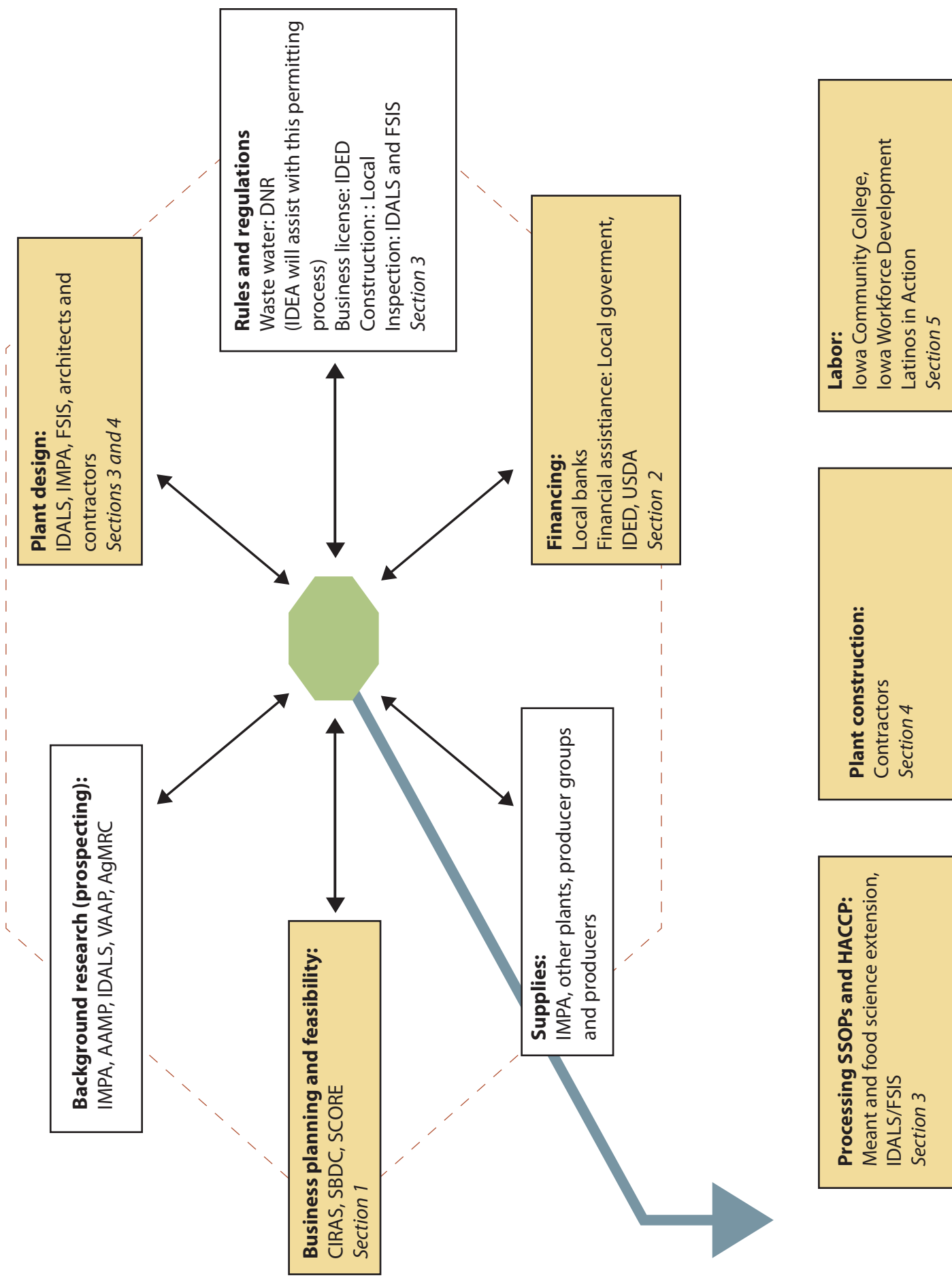
Fortunately we have access to a very good

⁵NCRDC, 2008. Iowa Meat Processors' Resource Guidebook. Available free for download at www.ncrerd.iastate.edu/pubs/contents/189.htm.

⁶A Barkema, M Drabenstott, N Novack, 2001. The New U.S. Meat Industry, Economic Review, Federal Reserve Bank of Kansas City.

Figure 2. Steps needed to build, expand or upgrade a meat plant and organizations that can help

(Adapted from the Iowa Meat Processors' Resource Guidebook, 2008)



study that looks at the costs of operating a mobile slaughter unit with an associated cut-and-wrap facility just across the border in northern Nevada. This work was in part the basis of our surveys so that we could compare their results with ours. There has been another study done that can also provide some comparative analysis from Wyoming.⁷ These comparisons offer rough and dated estimates of what costs and concerns might be in this situation. We did have one of the Nevada study authors present at the producers workshop, and he too cautioned about applying their work to the Inyo and Mono counties area.

Combined model results

Based on these existing studies, the costs of setting up a mobile slaughter unit are presented in **Table 3**. The average of the costs from the two studies would be approximately \$233,000. The cost of a cut and wrap facility as estimated by the two studies is presented in **Table 4**.

| Table 3. Mobile slaughter unit costs | | |
|--------------------------------------|-----------|-----------|
| Item | Nevada | Wyoming |
| Trailer | \$190,000 | \$150,000 |
| Supplies | \$5,000 | \$25,313 |
| Semi-tractor | \$45,000 | \$20,000 |
| Commissioning | \$6,500 | \$6,000 |
| Sales tax | \$10,325 | \$7,000 |
| Total | \$256,825 | \$208,313 |

| Table 4. Fixed cut-and-wrap facility costs | | |
|---|-------------|-----------|
| | Nevada | Wyoming* |
| Building expense | \$1,333,369 | \$299,550 |
| Furniture fixtures | \$36,360 | |
| Facility equipment | \$136,100 | |
| Totals | 1,505,829 | \$299,550 |
| Capacity (pounds/meat/year) | 2,169,600 | 950,000 |
| Cost per pounds processed | \$0.69 | \$0.32 |
| * The Wyoming study did not break down costs. | | |

There is considerable difference in the costs of the facility based on a gross estimate of the total pounds of meat processed per year. There are also differences in the time of the estimates

(Nevada in 2006 and Wyoming in 2004), location and in what specific equipment was included in the estimates. In summary, the Nevada combined facility start-up costs were estimated to be approximately \$1.76 million dollars for more than 2 million pounds of meat processed per year and the Wyoming combined facility would cost \$508,000 dollars at 950,000 pounds of meat processed per year.

Implications

A fundamental question is: What volume of meat would producers in Inyo and Mono counties be willing to commit to a local processing facility?

Our survey of producers give us some limited insight into the answer to that question. First, six of 10 respondents said they marketed a total of 4,725 calves in 2007. Two additional respondents sold 13,000 pounds of beef directly to consumers in large portions such as halves and quarters. Finally, eight respondents out of 10 said they produced 5,658 head of cattle in 2007. It is interesting that one respondent actually sold 1,000 pounds of meat in small cuts directly to consumers. However, six respondents out of 10 claimed to have enough interest in the idea of an alternative livestock processing facility to put at least a \$500 investment in a processing facility. A rough estimate of the possible investment interest on the part of six of the 10 respondents is \$23,000.

If we assume that these investors committed their entire annual production to the new facility, this would represent an annual processing of 3,935 head of beef cattle. If we further assumed that these cattle are slaughtered at a live weight of approximately 1,100 pounds each and that only 330 pounds of marketable meat is obtainable from each carcass, we have an estimate of 1,298,550 pounds of cattle to be processed. According to both the Wyoming and Nevada studies, a single mobile slaughter could process close to 1 million pounds of livestock per year.⁸ Thus, if our survey represents committed producers to this project they could possible supply the capacity of production needed to keep one mobile slaughter unit and associated cut-and-wrap facility fully operational for a year.

⁷Federal States Marketing Improvement Grant, 2004. Mobile Slaughter Unit for Wyoming: Assessment of Needs and Values.
⁸There are differences in the estimated capacity of mobile slaughter units (30,000 pounds to 1,000,000 pounds per year); my analysis suggests that the Nevada study is closer to the true capacity.

However, an investment of \$23,000 represents a down payment of only about 10 percent of the cost of creating a mobile unit, much less an associated cut-and-wrap facility.

While the survey responses do not suggest a strong willingness at present on the part of Inyo and Mono counties' producers to invest in the infrastructure necessary to develop an alternative livestock production facility, perhaps with time and further education a larger core group of interested producers could meet minimal needs for such an investment.

IV. Producers and partners

NCAT held two workshops attended by approximately 30-plus community leaders who expressed by their attendance alone some interest in pursuing next steps for building an alternative livestock industry in the two-county area. Copies of the flyers created to advertise the workshops are attached in the **Appendix** to this report. We arranged national and regional expert speakers for these workshops, who provided excellent examples of how to develop alternative markets for livestock and strengthen regional food systems.

These experts and others can be drawn on to guide any future efforts. It was clear from the meetings that there was both enthusiasm and skepticism among several local producers and merchants regarding more work on this effort. Of particular note was the interest of the Mammoth Mountain Ski Area in purchasing local livestock products for the resort. The fact that they purchase 50,000 pounds of fresh meat a year and grind their own hamburger on site is particularly significant. However, their current provider is Coleman Meats and that company is quickly moving to all-organic products. The question is can Inyo and Mono county livestock producers provide matching quality product at a competitive price?

V. Production

NCAT furnished excellent educational resources on the production requirements for producing organic, grass-finished and natural livestock products. As mentioned earlier, several ranchers in the two county area are already providing natural livestock products to Harris Beef.

There are no ranches that are currently certified organic or that appear to provide any significant amount of grass-finished beef to the current conventional market. If ranchers were to supply an organic or grass-finished market this would require some changes in their current production practices. Even meeting the less stringent demands of a natural product may be difficult for many ranchers in Inyo and Mono Counties. Also, the fact that 80 percent of the livestock producers are operating under federal or City of Los Angeles leases is of concern. There may be limitations linked to those leases that would make meeting the requirements of alternative market niches difficult. Finally, the most important question is whether there are significant costs to production changes and whether correspondingly significant price premiums are available to warrant changing production practices.

It was not clear, nor would anyone share, exactly what price premium they are currently receiving for providing a natural product to Harris Beef. One comment from a rancher was that it amounted to "additional pennies on the pound." Dinner conversation with another rancher suggested that \$1.40 per pound live weight for beef cattle was about what they were receiving for their product. Apart from gathering this anecdotal information, we also asked questions in our producer survey about alternative systems of production and price.

The first relevant question we asked was: If you were to participate in this local producer business entity, briefly describe how your current livestock operation might change (i.e. feed out and not sell on the hoof, produce specialty product, natural, grain fed)?

Unfortunately we received only four answers out of the total 10 respondents. Three answers were to reiterate that they were already doing natural beef production. A second answer was that the respondent would feed out animals on federal lands with some extra feed to supplement range.

The next question we asked was: Research suggests that certified organic and grass-finished beef can be profitable and return \$1.40 per pound live weight price and a profit above all costs including labor and management of \$266 per head. **Table 5** provides a summary of their responses.

Table 5. Answers to question 19: Profitability

| | Responses | % of total |
|--|-----------|------------|
| 1. This is a much higher price and/or profit than I am receiving now. | 4 | 40 |
| 2. This is not much different than the price and/or profit I am receiving now. | 2 | 20 |
| 3. Organic grass-finished production is not possible on my ranch. | 2 | 20 |
| 4. I don't trust that such prices can be maintained. | 2 | 20 |
| Total responses | 10 | 100 |

Clearly some respondents think that at the prices and profit level quoted, grass-finished and organic production improves profitability. However, an equal percentage doesn't believe the numbers or believe they can not produce a grass-finished or organic product. The two answers that suggest that their current price and profit is close to the potential price premium of certified beef are intriguing. One of these respondents was a very small producer who sells direct to consumers, suggesting the economic viability on low volumes of this business model. The other respondent already earning the indicated prices and profits also sold direct, but had a fairly high volume of sales, at 20,000 pounds of beef per year.⁹

It is important to note that the average 2007 price for cattle in Inyo and Mono counties was reported as \$1.14 per pound live weight, a 28-cent-per-pound lower price, or approximately \$280 less per head, for a 1,000-pound beef. However, the ability of consistently receiving such a price premium on a grass-finished organic product is questionable. The research on this is limited and the research referenced in the question has been done by NCAT and Iowa State University.

Table 6 provides more details on the profitability of grass-fed and organic beef produced in Montana in 2007. As can be seen, there were a range of returns to the ranchers in Montana selling to this very small niche market. Nonethe-

less, it does appear to be a very valuable market if you can meet the demands of the market and if you are willing to make the production practice changes necessary to meet those demands. Judging from the responses to our survey, such willingness does not appear to be very high.

VI. Market analysis

There are currently three markets for livestock beef in Inyo and Mono counties. The commodity market has a current price of \$1.14 per pound live weight; a natural/Harris beef market has an unknown price; and direct sales, with very limited data, appear to be about \$1.40 per pound live weight. There is no specifically grass-finished or organic markets for livestock as of yet in the two-county area. Unfortunately there also is very limited data on organic and grass finished markets. NCAT's recent work on this topic does bring together known research on this topic.¹⁰ Unfortunately, much of this data was collected under private contract and only parts of it can be shared publicly.

Table 7 from the aforementioned report that shows the average retail value of certified organic grass-finished beef based on a survey of 17 retailers who sell this product directly over the Internet. It is important to note several points from this table. First, a live 1,100-pound beef only represents approximately 330 pounds of retail cuts. Of course large and small processors need to create some kind of valuable product from

the remaining 770 pounds of animal. But just begin with the rough estimate that the retail value of an 1,100-pound organic grass-finished beef is close to \$2,850

Table 6. Profit raising organic grass-fed beef

| | Average | Median | High | Low |
|---|----------|----------|----------|-----------|
| Profit per head | \$163.07 | \$266.13 | \$547.80 | -\$376.71 |
| Break-even selling price for all costs (\$/pound) | \$1.25 | \$1.16 | \$0.90 | \$2.67 |
| Percentage return on all costs at \$1.40/pound | 17% | 21% | 56% | -20% |

⁹It is not clear if this 20,000 pounds represented total carcass weight or processed weight.

¹⁰NCAT, 2008. Building a Montana Organic Livestock Industry: Final Report Montana Growth Through Agriculture project.

Table 7. Pricing on a single certified organic grass-finished beef*based on average prices*

| Live animal weight | 1,100 pounds | | |
|----------------------|--------------|-------------|-------------|
| | Pounds | Price/pound | Total value |
| Tenderloin steak | 13.2 | \$26.75 | \$353.10 |
| New York strip steak | 15.4 | \$21.24 | \$327.10 |
| Rib-eye steak | 26.4 | \$19.02 | \$502.13 |
| Stir fry/cubes | 8.8 | \$6.95 | \$61.16 |
| Round roast | 75.9 | \$6.37 | \$483.48 |
| Ground beef | 190.3 | \$5.90 | \$1,122.77 |
| Total meat (pounds) | 330 | | \$2,849.74 |

or \$2.59 cents a pound. Thus, given a \$1.40-per-pound profitable level of production, the margin between the producers' value and the ultimate retail value of a single beef is about \$1.19 per pound.

The question is: Can the infrastructure be profitably built and operated with a gross margin of \$1.19 per pound? The Nevada study discussed above estimates such profitability for a mobile slaughter unit and cut-and-wrap facility with a cattle price of \$1.30 per pound live weight for beef slaughtered at 800 pounds live weight, or \$1,040 per slaughtered beef. This was for a grass-finished niche market and it was based on utilization of the facility for pig and sheep slaughter as well. Finally, it requires a production level of about 2 million pounds of livestock being slaughtered each year. See **Table 4** above for more information.

Despite the best available data, there should be great caution in trusting these kinds of paper-and-pencil analyses, as much needed as they are. There are only six of these types of project operating in the United States,

Merchant data

Table 8. Retail sales

| | |
|------------------------|-----------|
| Less than \$50,000 | 0 |
| \$50,000 to \$80,000 | 2 |
| \$81,000 to \$125,000 | 2 |
| \$126,000 to \$180,000 | 4 |
| \$181,000 to \$250,000 | 1 |
| More than \$250,000 | 11 |
| Total responses | 20 |

Table 9. Respondent location

| | |
|--------------------------|-----------|
| Mammoth Lakes | 5 |
| Bridgeport | 4 |
| Bishop | 3 |
| Lone Pine | 3 |
| Lee Vining | 3 |
| Olancho | 1 |
| June Lake | 1 |
| Chalfant Valley | 1 |
| Total respondents | 21 |

many of them only just starting operations. A valuable next step would be to visit these projects with the intent of gaining better understanding of actual operating facilities.

VI. Marketing opportunities

An important question to answer is: What regional demand is there for alternative livestock products in Inyo and Mono counties? Another critical question

is: What prices would those who demand these products be willing to pay for them? To begin finding answers to these two fundamental questions, we surveyed 282 merchants in the two-county area. A total of 28 surveys were returned. Seven of these surveys were excluded from the analysis because the respondents did not actually purchase meat products for resale to customers. Since we also used as the basis of our survey a similar survey done in Nevada, we will compare where appropriate and available our data with those of Nevada.¹¹

Results

We asked two questions about basic volume of sales of the retail business and location. **Table 8** indicates that a significant number of respondents do over \$250,000 in total retail sales. Also, the majority of respondents were from the Mammoth Lakes area, but with a fair representation of other locations. See **Table 9** for details.

The first question related to livestock purchases had to do with the fre-

Table 10. Frequency of meat purchases per month

| | |
|---------------|-----------|
| Never | 0 |
| One to two | 1 |
| Three to five | 10 |
| Six to 10 | 7 |
| More than 10 | 3 |
| Total | 21 |

¹¹This is the same study referenced earlier.

quency of meat purchases per month. It is clear from **Table 10** that the merchant respondents are making frequent purchases of livestock products.

We also asked the volume and price of current livestock purchases of beef, including steak and hamburger; and sheep, including leg of lamb and rack of lamb. Unfortunately, we did not get many responses to price and volume questions and no respondent reported purchasing sheep products. **Table 11** provides this information.

| Table 11. Produce volume and average price | | |
|---|------------------------|--|
| New York strip steak | | |
| Average price per pound | \$5.73 | |
| Pounds per month | 1,345 | |
| 8 respondents | 16,140 lbs/year | |
| Ground beef | | |
| Average price per pound | \$2.48 | |
| Pounds per month | 6,321 | |
| 13 respondents | 75,852 lbs/year | |

We also asked a series of questions about the attributes of livestock products they purchased. Here we have comparable data from the Nevada study. However, the Nevada study questions were asked of consumers, while ours were asked of retail merchants. This data in **Table 12** provides some important insight into the question of feasibility for a regional alternative livestock market.

First, it is surprising how similar the results are between our survey and Nevada, despite the fact that the Nevada results represent far more respondents and that Nevada surveyed consumers and we merchants. The notable exceptions to similarities are that marbling appears more important to the consumer than the merchant. Also, leanness is a much more important attribute to the consumer. It is notable that the attributes of natural, organic, or feed-type (grass-finished or other) seem to be relatively unimportant to the consumer or merchant. This data does not provide great optimism for organic, grass-finished or natural livestock products in the region. Finally, though price is not the most important attribute, it is important to both consumers and merchants.

The balance of the survey attempted to get

| Table 12. Important product attributes for fresh meat | | |
|--|------------------|---------------|
| | Inyo/Mono | Nevada |
| Taste and flavor | 1 | 1 |
| Freshness | 2 | 1 |
| Safety | 3 | 2 |
| Tenderness | 4 | 2 |
| Price | 4 | 4 |
| Marbling | 5 | 8 |
| | | |
| Muscle texture | 5 | 9 |
| Leanness | 6 | 3 |
| Type of cuts | 6 | 5 |
| Humane | 7 | 6 |
| Environ. friendly | 8 | 7 |
| Feed type | 9 | 8 |
| Natural | 10 | 8 |
| | | |
| Packaging | 11 | 8 |
| Organic | 11 | 9 |
| Origin | 12 | 11 |
| Brand name | 13 | 12 |
| Sales and promotion | 14 | 10 |
| Total respondents | 21 | 542 |

a sense of the merchants' willingness to pay for a specialty livestock product in Inyo and Mono counties. We presented the respondents with a choice between two products of three types: New York strip steaks, ground beef and leg of lamb. Choice A we termed the conventional lower-priced good. Choice B was the same product except for the inclusion of two attributes, grass finished (lean) and produced locally, or grown in the Eastern Sierras. If respondents chose B, we gave them a series of higher prices to choose from as well as the option of putting in their own price. If they chose A we also gave them a choice at a price that seemed reasonable to them or the option of simply stating that they would not buy the local grass-finished product no matter what the price. The results are presented in **Table 13** below.

It is clear from **Table 13** that for the most part the merchants were interested in the local and grass-finished (lean) product. In the case of New

| Table 13. Willingness to pay | | | | |
|---|--------------------------------------|-------------------------|------------------------------|-----------------------------------|
| Type of meat | Number of people who prefer the type | Maximum price per pound | Conventional price per pound | Average % of price rise accepted* |
| New York Strip | | | | |
| Grass fed, local | 15 | \$8.98 | | |
| Conventional | 3 | \$8.17 | | |
| | | | \$8 | 12% |
| Ground beef | | | | |
| Grass fed, local | 14 | \$4.13 | | |
| Conventional | 6 | \$2.92 | | |
| | | | \$3 | 27% |
| Leg of lamb | | | | |
| Grass fed, local | 12 | \$5.67 | | |
| Conventional | 3 | \$3.42 | | |
| | | | \$5 | 12% |
| * Percent price accepted if respondent choose grass-fed, local meat | | | | |

York strip steak and leg of lamb, merchants were willing on average to accept a 12 percent higher price for the product. In the case of ground beef, on average respondents were willing to pay a 27 percent higher price for the product. It is also interesting to note that even when the respondent rejected the local and grass-finished product, they did seem to think a somewhat higher price was justified for steak, but not ground beef or lamb.

However, do these acceptable higher prices for specialty livestock products provide enough margin to warrant the infrastructure and production change costs that would be required to meet the market? Our data does not easily provide an answer to that complicated question. If we look at the Nevada study data and previous work from NCAT we can gather further clues to this important question, but no definitive answer is possible without significant further study.

Some additional insights are available from the results of the aforementioned Nevada study. First, in the Nevada study the consumers (not merchants as in our study) were willing to pay 42 percent higher prices for New York strip steaks, 12 percent higher prices for ground beef and 15 percent higher prices for leg of lamb.

Though not directly comparable to our data, it is nonetheless interesting that consumers are willing to pay more for high-end cuts than merchants, about the same for ground beef and slightly lower for leg of lamb. This data partly reflects a major flaw in the Nevada study, in that they examined consumer willingness to pay. However, the expected buyers of the Nevada product are merchants, not consumers. For this reason, our study examined merchant willingness to pay.

Second, the Nevada study used the higher willingness to pay percent values as critical data for the analysis of the feasibility of investment in setting up a farmer- or rancher-owned mobile slaughter and cut-and-wrap facility. The actual price points that they used for their analysis for beef were based on whole carcass retail conventional prices increased by the percent increase in price that consumers indicated they would be willing to pay. They assumed a retail price for a whole beef carcass in their analysis of \$1,875 based on an 800-pound slaughter weight or \$2.35-per-pound average for the animal. However, NCAT's study, though it is based on certified organic and grass-finished animals, seems to imply a retail price for this product based on whole

Table 14. Comparison of per-pound retail pricing of whole beef carcass

| USDA 2007 average | Nevada study | NCAT study |
|--------------------------|-----------------------|------------------------------------|
| <i>Conventional</i> | <i>Grass finished</i> | <i>Grass finished/ organic</i> |
| \$2.09 | \$2.39 | \$2.59 |

carcass of \$2.59 per pound. **Table 14** summarizes this information.

The important point is that in the Nevada study there is an expectation that consumers will be willing to pay 30 percent more for beef products if they are local and grass finished, and that assumption leads to an assumed ability of the processor to charge 30 percent more for their finished beef products to merchants. The business profitability expectations of the Nevada study are critically tied to these assumptions. Meanwhile, our analysis, although based on a smaller number of respondents, suggests that merchants are not likely to pay 30 percent more for steaks, but might be willing to pay close to that for ground beef. Ground beef represents approximately 58 percent of the retail beef in an average carcass, so it may be that the Nevada study has severely underestimated the true value of their product and hence their profitability in operating a mobile slaughter unit and cut-and-wrap facility.

Finally, it is important to note that the Nevada study does include the slaughtering of lamb and pork to make sure the facility is utilized at full capacity year-round. By contrast, it appears that this multispecies utilization might not be the case for Inyo and Mono counties.

VII. Action plan and budget

In the estimation of NCAT the development of a regional and alternative livestock market is NOT feasible at this time in Inyo and Mono counties. Thus no future action plan and budget will be submitted. Without further educational and research efforts, along with increased willingness of livestock producers and local merchants to seriously take greater leadership and ownership in such an effort, further development of an alternative livestock product industry is not warranted. There are several reasons behind this determination:

1. It does not seem that there is a core group of producers willing to take significant financial risk to make the necessary investment in a facility for processing. The ranchers surveyed do not think a mobile processor with a combined cut-and-wrap facility is feasible. There does seem to be stronger interest in a stationary processing facility in their area, but such a facility is even more expensive and difficult to build than a mobile unit and cut-and-wrap facility.

2. The ranching community does not seem prepared to change their systems of production to meet the demands of alternative markets that have the potential to deliver price premiums. While some producers seem able to meet the demands of the natural beef market, that is only possible because the natural brand is connected to a very successful company, Harris Beef, which already has significant brand recognition.

3. The ranching community seems to be split at present between a subgroup that is working directly with Harris Beef and getting a higher price and those who are receiving general commodity prices. This is not the kind of situation where it is likely that ranchers could work together in a substantially risky and large investment project. Furthermore, it simply may be that Harris is offering enough of a price premium that there is little motivation to pursue an alternative market.

4. The local natural beef market alone does not offer the kind of price premium necessary to sustain the development of a processing facility, either stationary or with mobile unit, in the area. If a significant number of ranchers could commit to producing a significant volume of grass-finished or certified organic beef cattle, than it might be feasible to invest in such a facility. Even with the expectation of processing organic and grass-finished cattle, we highly recommend doing a very careful analysis similar to the Nevada study before launching too far into such a project.

5. The necessary willingness by the merchant community to pay more for alternative livestock products has not been demonstrated. Paying more for hamburger is not a sufficient foundation for establishing an alternative market and merchant unwillingness to pay more for high-end cuts or alternative products such as lamb is a major problem in making an alternative processing operation economically feasible.

Recommendations:

1. Continue to try to bring together the ranching community into more discussions of the economic viability of their industry. At present the ranching community seems divided. During the first workshop for producers, an NCAT speaker asked about pricing and profitability and not one person would respond. This demonstrates an unwillingness to work together on improving the economic conditions of the livestock industry.

2. Find out what it would cost to replicate the kind of analysis that was done in Nevada. Seek grant funding to pursue such a study if you can get a core group of the ranching and merchant community to commit to overseeing the study. See ATTRA publication *Building Better Rural Places* at www.attra.ncat.org for funding sources.

3. Visit the California Central Coast mobile processing unit to gain a better understanding of actual operational costs of a mobile slaughter and cut-and-wrap processing facility.

4. Provide greater educational opportunities to the ranching community. The producer survey asked questions about the need for future education, and **Table 15** provides the results.

Although this assessment may seem harsh, it is not our intention at NCAT to squash the passion of any individuals to improve their communities and way of life. We met a lot of passionate individuals and kind folks who are struggling to preserve their way of life during our work on this study. NCAT's mission is helping people by championing small-scale, local and sustainable solutions to reduce poverty, promote healthy communities, and protect natural resources. We welcome any future opportunity to further your efforts.

Table 15. Educational needs

| | Number wanting |
|------------------------------|----------------|
| Marketing | 4 |
| USDA label specifications | 3 |
| Managing public lands | 1 |
| Cooperative formation | 0 |
| Business planning/investment | 2 |
| Animal fertility/genetics | 4 |
| Specialty production | 2 |
| Dealing with offal | 1 |
| Meat tenderness | 2 |



Appendix

AMS establishes voluntary standard for grass-fed marketing claims

by Phyllis Marquitz, Director, Food Policy and
Audrey Monroe, Manager, Technical Issues Communication –
NCBA

Summary

The U.S. Department of Agriculture (USDA) Agricultural Marketing Service (AMS) issued a voluntary standard for grass (forage) fed marketing claims Oct. 15.

The grass-fed standard states that grass and/or forage shall be the feed source consumed for the lifetime of the ruminant animal, with the exception of milk consumed prior to weaning. Additionally, the animal cannot be fed grain or grain by-products and must have continuous access to pasture during the growing season. The full standard is available on the Internet at <http://www.ams.usda.gov/lsg/stand/GrassFed101607.pdf>.

Background

Increasingly, livestock and meat producers are using production or processing claims to distinguish their products in the marketplace. AMS, through its voluntary certification and audit programs, verifies the accuracy of these claims.

The proposed voluntary standard establishes the minimum requirements for producers choosing to operate a USDA-verified program involving a grass (forage) fed claim. The standard encourages uniformity and consistency in commercial practices.

AMS proposed an earlier standard in 2006 that was modified based on public comment to become the new standard. AMS received 19,811 comments concerning the 2006 grass (forage) fed claim from consumers, academia, trade and professional associations, non-profit organizations, national organic associations, consumer advocacy associations, retail and meat product companies and livestock producers.

Dietary requirements

In order to market beef as grass fed, the ruminant animal's diet throughout its lifespan must be derived solely from grass (forage), with the exception of milk (or milk replacer) consumed prior to weaning. For the purpose of this voluntary claim, forage is defined as any edible herbaceous plant material that can be grazed or harvested for feeding, with the exception of grain. Forage-based diets can be

derived from grass (annual and perennial), forbs (e.g., legumes, *Brassica*), browse and 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 – the time period from the average date of the last frost in spring to the average date of the first frost in fall in the local area of production. AMS determined it was impractical to restrict the use of harvested, stockpiled or stored forages due to the diverse range and climate conditions across the United States. Therefore, hay, haylage, baleage, silage, crop residue without grain and other roughage sources may be included as acceptable feed sources.

Supplementation

Routine mineral and vitamin supplementation may be included in the feeding regimen to correct any deficiencies in the animal's diet. Some supplemental ingredients are not allowed in the diet, including cereal grains, grain byproducts (starch and protein sources), cottonseed and cottonseed meal, soybean and soybean meal and non-protein nitrogen sources such as urea and animal byproducts.

If incidental supplementation occurs due to inadvertent exposure to non-forage feedstuffs or to ensure the animal's well being during adverse environmental or physical conditions, the producer must fully document the supplementation that occurs including how much, how often and what was supplemented.

Production practices

AMS determined that additional production practices beyond a grass-fed diet should not be incorporated in this standard. Additional labeling claims can be made in conjunction with the grass-fed claim (e.g. free-range, no antibiotics or hormones administered) to highlight other production practices. Importantly, a marketing claim of grass fed does not mean the animal was raised in free-range conditions.

Officials made clear in the new standard that issues regarding the nutritional qualities of meat from grass-fed animals are outside the scope of the marketing claim standard. AMS determined that nutritional claims on labels are more appropriately addressed through a different USDA agency and a different approval process.

Verification of marketing claim

Beginning Nov. 15 (the voluntary standard effective date), livestock producers became eligible to request that USDA AMS verify their grass (forage) fed claim. Notably, in the standard, AMS clarified that all label claims, including ones verified by a USDA Process Verified Program, must be approved by USDA's Food Safety and Inspection Service (FSIS) Labeling Program and Delivery Division (LPDD). Therefore, all labeling issues and questions, including requiring a USDA Process Verified Program for approval of a grass (forage) fed claim, transition periods and the use of grass fed in a company's name must be addressed by FSIS.

Upon request from AMS, verification of the grass-fed livestock marketing claim will be accomplished through an audit of individual production processes. The producer must be able to verify that the grass marketing claim standard requirements are being met through a detailed documented quality management system.

Key Points

- USDA's Agricultural Marketing Service issued a voluntary standard for grass (forage) fed marketing claims on Oct. 15 – establishing the minimum requirements for producers operating a USDA-verified program involving this claim.
- In order to market beef as grass fed, the ruminant animal's diet throughout its lifespan must be derived solely from grass (forage), with the exception of milk consumed prior to weaning.
- Animals marketed as grass fed must have continuous access to pasture during the growing season; however, a marketing claim of grass fed does not mean the animal was raised in free-range conditions.
- When the voluntary standard became effective on Nov. 15, livestock producers became eligible to request that a grass (forage) fed claim be verified by USDA AMS.

Building an Eastern Sierra Food System

Starting With Alternative Livestock



Jan. 7, 2009 at
Whiskey Creek
Restaurant
in Bishop
from 1 to 4:30 p.m.



Learn about alternative livestock

Can organic, natural
and grass-finished
livestock markets
be more profitable?

How can we build
local markets for
our products?

Find out at this workshop,
sponsored by the Inyo and
Mono Counties' Agricultural
Commissioner's Office, Inyo County
and Mojave-Desert Mountain RC&D.

A social hour with an alternative beef
taste-testing experience will start at
3:30 p.m.

To RSVP or for more
information, contact
Kelley Williams at
(760) 878-0292 or
kwilliams@inyocounty.us

Speakers

Nancy Matheson

*Agriculture Program Specialist,
National Center for Appropriate Technology, Butte, Mont.*



Nancy will speak about developing regional and local food systems. She helped create the Grow Montana Coalition, which promotes community economic development policies that support sustainable Montana-owned food production, processing and distribution and improve Montanans' access to Montana foods. Nancy grew up on her family's dryland wheat farm east of Conrad, Mont., and later moved to Berkeley, Calif., where she earned a Bachelor's degree in human and natural resource geography at the University of California-Berkeley. She has more than 20 years of involvement in agriculture and rural community development with an emphasis on sustainable food and agriculture systems education in the Northern Rockies and Intermountain Northwest.

Mary Canada

*Eastern Sierra Field Representative,
Sierra Business Council, Mammoth Lakes, Calif.*



Mary will discuss her interest in the Slow Food movement and her work with local chefs in developing a local and regional food system. Mary was a small business owner for 28 years in Mammoth Lakes. Her other jobs in

the Eastern Sierra, including ski lift operator, sporting goods salesperson and fire lookout attendant, have all contributed to her success in promoting the Sierra Business Council's mission to the area. Mary currently serves on the Mammoth Unified School Board.

Debra Garrison

Central Coast Grown, San Luis Obispo, Calif.



Debra will speak about her current efforts in the development of Central Coast Grown and her work with a unique farmer cooperative. Debra

was one of the founding members of the Central Coast Ag Network and works as an independent contractor to help local farms and ranches market their products. She serves on the board for the San Luis Obispo (SLO) Ag Task Force and is a committee member of the SLO Agriculture Commissioners Direct Marketing and Ag Tourism working group. Her primary goal is to see a sustainable community food system in San Luis Obispo County. Debra spent most her life on her family's farm in Nipomo, Calif., where she raised turkeys and grew avocados, apricots and lemons. With the assistance of her father, Harvey Garrison, she developed farmers' markets in Santa Maria and Lompoc after participating in state-level policy development of California Certified Farmers' Markets. Debra has an agri-business degree from Cal Poly, San Luis Obispo, concentrating in marketing and policy.

Alternative Livestock

Production, Processing
and Marketing Options



Nov. 17 at
Whiskey Creek
Inn
in Bishop
from 1 to 5 p.m.



Learn about alternative livestock production

Can organic, natural
and grass-finished
livestock markets
be more profitable?

Can mobile
processing
return more value
to the producer?

- Find out at this workshop, sponsored by Inyo and Mono Counties' Agricultural Commissioner's Office,
- Inyo County and Mojave-Desert Mountain RC&D.
- A social hour from 4 to 5 p.m. will follow with an alternative beef taste-testing experience.

To RSVP or for more information, contact the Inyo and Mono Counties' Agriculture Commissioner Office at (760) 873-7860

Speakers

Jeff Schahczenski

*Agricultural economics and marketing specialist,
National Center for Appropriate Technology, Butte, Mont.*

Jeff will speak about issues around alternative beef profitability and marketing. He will also talk about issues of labels and branding of new livestock products. Jeff is an agriculture economist with more than 25 years of experience in sustainable agriculture and rural development projects including cooperative development and marketing analysis.

Lee Rinehart

*Livestock production specialist,
National Center for Appropriate Technology, Shavertown, Pa.*

Lee will talk about changes in beef production practices to meet the needs alternative beef markets, particularly organic, natural and grass-finished systems. Lee has a Master's degree in agricultural education and a Bachelor's in animal science from Texas A&M University. He has previous experience as an extension agent in Texas and Montana, as well as farm-based experience as the manager of a beef cattle operation. Lee is author of several ATTRA National Sustainable Agriculture Information Service livestock publications including the following: *Cattle Production: Considerations for Pasture-Based Beef and Dairy Producers*, *Ruminant Nutrition for Graziers Pasture and Rangeland* and *Grazing Management*

Linda Coffey

*Agriculture livestock program specialist,
National Center for Appropriate Technology, Fayetteville, Ark.*

Linda will talk about changes in ruminant production to meet the needs of alternative ruminant markets, concentrating on sheep and lamb in particular. Linda comes from a family farm in central Missouri, where she raised cattle, hogs, sheep and horses. She majored

in animal science at the University of Missouri and interned at the United States Sheep Experiment Station near Dubois, Idaho. She also holds a Master's degree in animal science. Linda joined NCAT in August 2000 and works primarily with the ATTRA National Sustainable Agriculture Information Service project on sheep, goat and multispecies grazing issues. She is author of several ATTRA livestock publications including the following: *Dairy Sheep, Goats: Sustainable Production Overview* and *Meat Goats: Sustainable Production*.

Steve Lewis

*Douglas County extension educator,
College of Cooperative Extension, University of Nevada-Reno*

Steve will discuss recent efforts by Nevada livestock producers to create a mobile slaughter and cut-and-wrap facility for a branded natural beef production cooperative in northern Nevada. Steve is an extension educator at the University of Nevada Cooperative Extension in Douglas County. He holds Bachelor's and Master's degrees in agriculture from the University of Nevada-Reno and a Doctorate in agricultural education from Texas A&M University. He focuses on community education in leadership, environmental stewardship, agriculture and youth development.

George Work

*Rancher and owner
Work Ranch, San Miguel, Calif.*

George will speak about his experience as a founding member of the Central Coast Home Grown Meat Alliance and the group's finally near-successful efforts to open one of California's first mobile large animal livestock processing units. George and his wife, Elaine, are national award winners for environmental ranch stewardship and offer their expertise to those wanting to learn more about land stewardship.

Save this date for a second workshop

Building an eastern Sierra food system: The case for alternative livestock Jan. 7, 1 to 5 p.m. at Whisky Creek Inn, Bishop

What do the terms **localvore**, **slow food** and **building a regional food system** mean? How can we eat more of our local beef and lamb? How can we feed our ourselves, our schools and tourists with food from our region's agriculture?

Speakers to be announced.