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## **L. AGRICULTURE**

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### **1. Importance of Agriculture to the Economy (Table L-1)**

When viewed from its broader perspective including ag inputs and processing in addition to production, agriculture is the Valley's third largest supplier of basic income, and largest source of jobs in the basic employer group. Of the \$379,233,000 base income driving the Valley economy in 2005, Agriculture activities contributed an estimated \$143.637,000 (37.9%). Agricultural jobs estimated at 5,571 comprised 41.6% of all base employment.

From the viewpoint of individual counties, Agriculture income is most important to Rio Grande (50.2%), Saguache (38.1%), and Costilla (21.1%). Over half of the Valley's Agribusiness (\$88.3 million) is concentrated in Rio Grande, followed by Saguache (\$21.3 million), and Alamosa (\$20.6 million). Job wise, Agriculture ranks as the # 1 source of base employment in Rio Grande, Alamosa, Saguache, Conejos, and Costilla counties.

According to data sources used in the model, the production of crops and livestock brings in about \$70.3 million of Agriculture's base income (36.1%); ag inputs provide 50.0%; and 14.9% is due to ag processing. We are questioning the methods used in the analysis to identify ag inputs, which we would expect to be a smaller amount than ag production.

Ag inputs represent the indirect basic suppliers to agriculture including farm services, fertilizers, seeds, chemicals, finance, various types of wholesale distribution, and associated rail and truck transportation. Ag processing includes the manufacturing of food and organic products, and a portion of the packing, shipping, and warehousing operations.

### **2. Farm Operations (Table L-2)**

Table L-2 contains 2006 data on crop and livestock production reported by the National Agricultural Statistics Service, and data reported in the 2002 Census of Agriculture data on farm and ranch operations. The Ag Census is conducted on a 5-year cycle, and 2007 data will not be available until sometime in 2008.

In 2002, the table shows that the total farm and ranch land in the region was almost 1.5 million acres, or about 28.1% of the total land area. Average size for a total of 1,627 farms and ranches in the region was about 909 acres. Farm averages larger than that were concentrated in Costilla and Saguache counties, and the median-sized farm was usually quite a bit smaller. The average value of land and buildings ranged from \$398,956 in

Conejos, to \$1,319,486 in Saguache. Cropland totaling 603,900 acres for the region represented 40.8% of all the farm and ranch land, and 368,309 acres (61.0%) were irrigated.

The region's total market value of ag products sold was reported at \$300,349,000, consisting of \$262,918,000 in crops, and \$36,967,000 in livestock. This cost farmers \$214,573,000 in expenses, with a net cash return of \$98,204,000.

### **3. Crop and Livestock Production (Table L-2)**

A total of 25,400 acres of barley was harvested in 2006, which produce 3,640,000 bushels at average yield of 143.3 Bu/acre. Rio Grande and Saguache had the largest barley producers, and Conejos and Saguache had the best yields ranging from 160-163 Bu/acre. A total of 134,000 acres of alfalfa hay was harvested, with 2.2 tons/acre. The largest alfalfa hay producers were in Saguache and Conejos counties, as were the largest producers of other hay.

According to the NASS report, 54,600 acres of potatoes were harvested, with an average yield of 380.4 Centerweight (100 lbs) per acre. Potatoes were concentrated in Rio Grande, Alamosa, and Saguache counties, with total production of 20,700,000 Cwt. (or about 2.1 billion pounds).

A region total of 13,800 acres of wheat was harvested, with the largest concentration in Saguache, Alamosa, and Rio Grande. Average yields range from 83 Bu/acre in Conejos to 116 in Saguache.

The January 1, 2007 livestock inventory showed a region total of 70,000 cattle and calves, and 45,000 of these were beef cows and heifers that have calved.

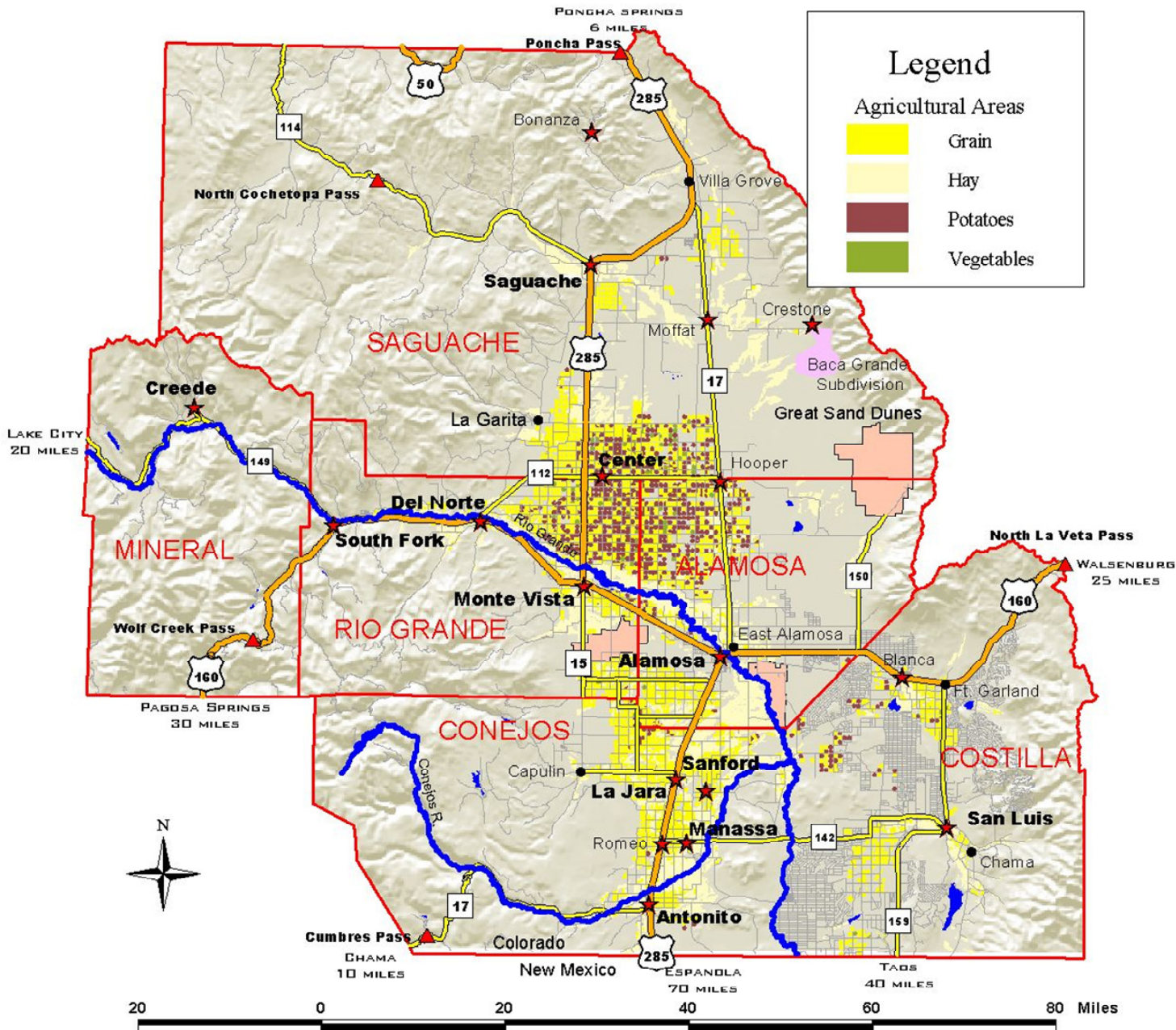
### **4. Crop Production and Value (Table L-3, Table L-4)**

Table L-3 provides a year-by-year comparison of the acres harvested, yield, price, production value by acre, and total production value for the Valley's major crops. This underscores the importance of potatoes as the main cash crop, which exceeded all others in value per acre and production in all years of 2000-2006. For 2006, potatoes generated a total production value of over \$190.5 million, followed by alfalfa hay (\$71.4 million); other hay (\$13.5 million); spring barley (\$10.2 million); and spring wheat (\$7.4 million).

Prices for 2006 as reported in the table show that potatoes had their third-best year since 2000 at \$8.40/Cwt; wheat had its best year at \$5.10/Bu; and alfalfa had its best year at an average of \$133/ton.

# Map 14

## San Luis Valley Region – Crop Growing Seasons



Source: San Luis Valley GIS/GPS Authority.

Table L-4 shows typical planting and harvesting dates for field and vegetable crops. The Valley's high altitude confines the crop growing season to about 100 frost-free days, but farmers have been able to produce some bumper yields and superior quality crops in this short time period. A 9-year running drought has led to a cut-back in acreage, but has probably helped to sustain higher crop prices. High altitude and extremely cold winters has also helped to reduce many of the plant diseases and pest damage experienced by growers in lower-altitude locations.

## **5. Potatoes (Table L-5, L-6, L-7, L-8)**

Table L-5 compares the 1994, 2000, and 2006 fall crop production of the leading potato-growing states. Colorado (with the San Luis Valley as the State's sole fall producer) ranked as the #5 producer after North Dakota, Wisconsin, Washington, and Idaho. In 2000, the Valley ranked as the nation's #4 producer based on production of almost 28.0 million/Cwt, compared with 22.7 million/Cwt for the 2006 crop due to a reduction in potato acreage. Because of its limited processing facilities, the Valley ships 95% of its crop to fresh markets, making it the #2 producer in the nation for the fresh crop.

Table L-6 gives a view of the region's potato production by county as reported in the CPAC report. We note that the NASS source did not report any production for Conejos and Costilla counties, whereas this does. In all years from 2000-2006, Rio Grande County has led the Valley in potato production. For 2006, Rio Grande posted a total of 20,500/Cwt, or 34.3% of the region's production of 59,700/Cwt. Alamosa County is second with 18,500/Cwt (31.0%); followed by Saguache, 15,600/Cwt (26.1%); Costilla, 4,500/Cwt (7.5%); and Conejos, 600 (1.0%).

Table L-7 shows how the 2006-2007 fall crop is being utilized. Of a total USDA production estimate of 22,686,000/Cwt, 10,405,196 (45.9%) is US No. 1 Quality; 3,913,534/Cwt (17.3%) is US Commercial Grade; and 974,688 (4.3%) US No. 2 Quality. Other breakouts of the crop show 11.2% as farm use, shrink, and livestock; 8.2% shipped to out-of-area processors; 5.5% as seed to plant 59,200 acres; 3.7% for local processing; 3.4% as Certified Seed to growers outside the Valley; and 0.5% as specialty (fingerlings).

Table L-8 looks at the flow of the crop from the beginning, middle, and end of the 2006-2007 growing season. These provide a sample of the content reported in CPAC's monthly newsletter under "Spud Facts," in order to understand the variability of crop shipments, prices, and other information. We see from the table that Russet varieties comprise the vast majority of the crop, and about ¾ of the crop is U.S. No. 1 quality. Only a small portion of the shipments are by rail, and by the end of August, 37,365 truckloads were tallied. Red varieties in size B were listed at \$18.50 at the start of the shipping season in September, compared with \$7.44/Cwt for bulk Russets.

Prices are better when warehouses ship in cartons rather than bulk, and 70% is now being shipped in 50/lb cartons. Russet Norkotah type varieties make up 60% of the crop, with other varieties consisting of Yukon Gold, Mountain Rose, Satina, and specialties such as purples and fingerlings.

According to CPAC, potatoes are still the second most popular vegetable in America, but consumption has been on a steady decline for decades. In 1970, the average consumer ate about 60/lbs annually, compared with only 43/lbs in 2006. One reason is that potatoes take longer to cook, and today's consumers want meals prepared in 20 minutes or less. Another reason is the aging of population and increase in two-person households, which typically eat less than those with children and more traditional cooking.

To confront declining demand, farmers are forming cooperatives and "growing to demand and exporting." According to CPAC, the United Potato Growers Cooperative has done a good job of reducing acreage and managing supply to keep the prices high. Colorado, North Dakota, and Minnesota are now marketing as one area in competition with the potato giants of Idaho and the Northwest. None of these states, however, can compete with the quality of crop in the San Luis Valley.

About 22 warehouses pack and ship potatoes in the Valley, and 98% of the crop goes into storage before being shipped. Modern equipment now makes it possible for potatoes to go from storage to warehouse to truck any day during the shipping season without exposure to the outdoors. Transporting to market is becoming more expensive due to a periodic shortage of trucks, which often have trouble finding backhauls from the Valley and are impacted by escalating fuel prices. Without immigration reform, the potato industry is also being impacted by drastic reductions in the available farm and warehouse workforce.

## **6. Water Management Impacts**

As stated in the CPAC Market report, all crops in the Valley rely on irrigation from either surface water or ground water, with surface water from surrounding mountains used to recharge the underground aquifer through canals and augmentation pits. While snowpack in the mountains has improved, the Valley is still trying to recover from nine straight years of drought conditions, and the aquifer used as the ground water source for irrigation has been on a steady decline. As the aquifer drops, irrigation systems cannot get enough water fully charge the system, and many growers are using additional wells to supplement their primary well in order to produce enough water to grow their crop. This has already triggered mandatory water metering, with well regulation as the next step.

In order to bring production more in line with water supply, farmers voluntarily cut back their acreage by 15%, and are considering a Sub-District Plan. The goals of this plan are to reduce groundwater levels to a sustainable level while protecting senior water rights and meeting the Rio Grande Compact delivery obligations. The controversial plan will permanently retire 40,000 acres from irrigation, and require producers to pay water user

fees to fund the permanent land retirement. If the plan is accepted by growers and takes effect, this should prevent the State from imposing well regulation.

## **7. Value-Added Ag Processing**

Value-added in any form is important to the economy, but processing in the narrower sense includes only those activities which change the form of the raw product such as slicing, dehydrating, cooking, or other alteration. In order to support processing activities of this type, we helped in developing a \$2.7 million ag waste treatment facility in Center in 1998 with capacity to serve several processing plants at a time. This enabled three processing plants to be developed, two of which are no longer in service. These included a carrot processing plant which could not compete with established carrot processors, and a peeled potato operation based on a successful product in Europe which did not work in the U.S. markets. Both of these ventures were locally initiated. Original owners of the Sunshine Potato Flakes dehydrated potato plant in Center were also unable to maintain a consistent level of operations, and the plant is currently in operation and owned by the Idaho Pacific/Otter Tail Corporation. For three or more years the company has been planning a doubling of the size of its operations, but this was contingent on development of a high-volume natural gas pipeline to the town and plant primarily done with public funds.

A venture by Farm Fresh Direct as mentioned in the last CEDS involved a shrink-wrapped potato compatible for microwaves which can be cooked in 9 minutes or less. We assisted this project with a marketing grant from the State Ag Marketing Division, and this became a successful ongoing operation. At last report, Farm Fresh had 38 growers and 9 packing sheds, and is distributing to about 35 food chains and over 3,100 individual stores across the U.S.

Re-opening of the former Staley starch plant north of Monte Vista by Moraine Partners of Wisconsin which we assisted with EDA loans will restore the Valley's longest standing value-added ag operation, and provide 18 jobs to start. This will require upgrading of the plant's primary treatment pond, which was a problem in the past. Production will concentrate more on a food-grade starch, and may eventually lead to higher value-added products such as a pharmaceutical grade of starch. Vodka production from potatoes has also been explored by several prospective loan clients.

An article in the March 2007 issue of *The Economist* reported that the City of San Francisco was outlawing plastic bags, and replacing them with bags made of potato or corn starch. This may provide another potential for starch production to be explored.

Several potato farmers are planning to convert to organic production and meet USDA Certified Organic standards, and some possibility may exist for a value-added processing operation based on organic potatoes using facilities

in Center. The anti-oxidant properties in Valley-grown crops were studied by Colorado State University researchers, but results were inconclusive. Canola crushing, primarily for oil used in biodiesel blending was studied, but required more extensive acreage than farmers were willing to consider.

Byproducts of processing often have more value than the original product, and further study of these opportunities has been a long-standing goal pending full production and consistent levels of operation at the existing processing plants. Production of beta carotene from the byproducts of carrot processing would offer considerable potential along these lines.

## **8. Barley and Spring Wheat**

The Valley's high, dry, cool climate is also ideally suited for barley, which also works well in rotation with potatoes and alfalfa. As noted in the tables above, 24,500-25,400 acres in 2006 were used for barley with production in the range of 3.6 million bushels. Malting varieties comprise 75-85% of the crop, and the most popular variety is Moravian 14. Barley is also grown as a cash crop for the beer industry, with two-row barley having higher malt extraction rates.

The Molson-Coors Brewing Company has traditionally purchased most of the Valley crop, and sets high standards for crop quality based on moisture content in the 13% range. In 2006, barley was not accepted by Coors due to moisture damage, but can be sold as cattle feed at two-thirds the price. Annheuser-Busch may also be planning 5,000-10,000 acres. Prices on the open market are now at about \$5.50/Bu which is much better than prior years.

Interest in the Valley as a location for malting or brewing operations has continued over the past 25 or more years, and may be taking on new interest for the expanding brewpub industry in Colorado and nearby states. There are no malting production operations of this type in Colorado, and the brewpubs are relying on supplies from out of state.

Development of the mushroom farm in 1970's created a market for straw used in mushroom compost. A limited demand for straw bales also exists for home construction. Straw as a livestock feed is now being introduced through a process called ammoniation, which increases the protein content and digestibility of the straw, kills molds, and makes it more palatable and nutritious for livestock. The process involves covering the stack with plastic, spraying with ammonia through a channel in the stack, and allowing it to work on the straw for a few weeks.

The estimated 13,800 acres and 1.45 million/Bu of spring wheat, including soft white, red, and durum, is providing some surprisingly high price returns. Normally around \$3.00/Bu, it now brings in about \$8.00/Bu. This is attributed to expanding demand for corn used to make ethanol, which is replacing wheat acreage to grow corn

and creating a market shortage for wheat. Since barley can also be used as a cattle feed, the demand for corn for ethanol may also create a demand for barley to feed cattle.

## **9. Alfalfa and Hay**

The 134,800-158,000 acres and 458,400 tons of alfalfa hay as reported in the tables for 2006 is second in value only to potatoes in the Valley, and prices have remained strong. Prices are reported variously at \$100-\$135/ton, and projected at \$120/ton for 2007. Prices have been averaging \$96/ton for several years, with super supreme quality bringing \$20/ton more. Prices for alfalfa squares run even higher.

Natural grass and oat hay is grown for beef cattle and horses, and alfalfa is generally reserved for dairy cattle with some also for horse feed. Dairies in Northern Colorado and Southern New Mexico are some of the best customers, but drought has reduced acreage and it takes more water to grow hay. Valley hay has a widespread reputation for its excellent quality and protein content, attributed in part to high altitude growing conditions and more days of sunshine. Three cuttings in the Valley are not uncommon, but the second cutting stands a greater risk of rain damage.

Alfalfa and hay quality is measured in terms of moisture and protein content. Hay bailed at 15-18% moisture is considered good quality, and premium grade alfalfa is 22% protein or higher. Grass hay runs from 8-12% protein. Protein content is determined by plant maturity, harvesting conditions, plant species, and growing conditions. Hay should also be free of weeds which lower food value.

## **10. Carrots and Other Vegetables**

Colorado is the second highest producer of carrots in the Nation, and the Valley is one of the State's best growing regions. Crop acreage is in the 2,000-3,000-acre range, with yield averaging about 35 tons/acre. Grimway Farms with main location near Bakersfield, California is the Valley's major producer, although organic carrot farming perfected by Harmon Farms is also well known. Another big producer in the Valley is marketed under the Nature Fresh brand. Carrots grown in the Valley are superior in quality and taste, and are believed to contain a relatively higher concentration of nutrients.

The Valley is also noted for lettuce and spinach production, with acreages also in the 2,000 range. One place is also producing "disease-free" strawberry runners for a company in Florida, where it cannot grow the runners well due to pest damage.



## **11. Canola**

The Valley's growing conditions are also perfect for canola, which was promoted by a Canadian cooking oil processor and tested as an alternative crop by a fair number of Valley farmers about 4 years ago. This was successful from the standpoint of production, but provided only a small price advantage to farmers, and the company pulled out after a few years after failing to negotiate a contract agreement. Canola seed was also marketed on a small scale as a high-nutrition condiment alternative to bacon bits and poppy seed, but this required a greater marketing effort than was affordable.

More recently, the feasibility of producing large acreages of canola as a blending oil for biodiesel fuel along with a locally-based canola crushing facility was studied, but found not to be viable at this time. Like barley, canola is an excellent rotation crop with potatoes, but it has not been able to compete with barley for price or generate the level of grower interest needed for canola-based operations.

Today, only about 2,000 acres are currently being planted, and this is almost entirely for hybrid seed contracted to Land-O-Lakes. This does not, however, rule out future possibilities depending on prices competing with barley. Potential also exists for growing rapeseed, a different form of canola, to produce oil for chainsaws and other Forest Service equipment. Prices for canola are currently at about 11 cents/lb.

## **12. Alternative Crops**

About 3,000 acres of Sorghum-Sudan, a type of sugarcane, is currently being grown as an excellent rotation crop which uses half the water, and will probably be expanding in use. Also referred to as "green manure," the sorghum is plowed under as mulch and soil amendment, and can also control potato nematodes. This crop also may also have potential for cellulosic ethanol fuel production, which should be more fully explored.

Quinoa, a South American high altitude crop introduced to the Valley over 25 years ago, is extremely high in protein and offers great potential. With the exception of White Mountain Farms in Mosca and a few other growers, very little interest has been shown. General Mills indicated interest in the crop more than a decade ago, but would require a minimum production level at least twenty-fold level of what it is now. Black quinoa, a hybrid with lambsquarter, is especially tasty and cooks up like rice or Cream of Wheat.

Sunflowers also do very well in the Valley and could be considered at some point. Dove Creek in Southwest Colorado currently would serve as a market, with the main use of the crop for sunflower oil.

A combination of greenhouse and hydroponic production for tomatoes was successfully done in the Harmon project, and potential for more operations of this type has been explored by a Canadian firm and several other

investor groups. Several sites in the Valley also have access to a geothermal energy-saving source, and hydroponics attached to fish farms can have added efficiency.

Organic food markets offer considerable potential for the Valley, but only a few farmers are pursuing it. In general, more promotion is needed to expose organic market opportunities, and more assistance from qualified agencies is needed to assist farmers in adapting to the new organic technologies. Grower cooperatives for entering the organic markets provide a number of advantages, but a greater level of assistance is also needed in forming and managing cooperatives.

### **13. Livestock**

The Valley has established a high reputation for the quality of its livestock, particularly cattle and sheep, and is famous for its horses and horsemanship. In addition, bison have also done well on the Nature Conservancy's Medano/Zapata ranch. A number of ranchers also specialize in raising organic beef which is entirely range fed, with the most notable being the Coleman beef operation in Saguache County, and Salazar's ranch in Conejos County. Cattle in the Valley are also said to have well-developed immune systems.

Table L-2 shows the inventory of all cattle and calves at 70,000 at the beginning of 2007, with beef cows and heifers that have calved at 45,000 of this total. Conejos County has the largest concentration at 24,000, followed by Saguache (18,000); Rio Grande (13,500); Alamosa (8,500); and Costilla (6,000). While the table does not show any entries for Mineral County, the county is hugely impacted by cattle grazing on forest lands in the summer months.

The total market value of all livestock sold as reported in the table for the region is \$36,967,000, which compares with \$262,918,000 for crops. Cattle prices have generally been good, as well as future prospects. All attempts at value-added processing based on livestock have been exclusive to Conejos County, and all were unsuccessful or unsustainable. The markets selected for these ventures proved to be extremely difficult, but more blame is generally placed on project management than markets. Projects included a meatpacking venture in Sanford focused on Denver Kosher markets initiated by San Luis Valley and northern New Mexico cattle producers. Three slaughtering operations on a small scale currently exist in Conejos County.

Other livestock includes sheep and lambs as the largest herds, and an increasing number of goats for meat at about 3,000 head. Llamas and alpacas are becoming a more common sight on ranches. About 6 range flock operations for sheep still exist, with about 500 head each. Goat cheese production is a possibility, and few processing plants exist anywhere for meat processing, even though markets are increasing. Only about 1,000 pigs are being raised, and confinement operations generally would not be considered here. Yarn spinning and weaving is still popular here, but not being done on a significant commercial scale.

**Table L-1**  
**Agriculture - 2005 Economic Base Analysis**

**San Luis Valley Total Base Income (\$1,000) - \$379,233**  
**Agriculture - \$143,637 %Total Basic - 37.9 Rank in Region - 1**

	Alamosa	Conejos	Costilla	Mineral	Rio Grande	Saguache	San Luis Valley
<b>Total Basic Income (\$1,000)</b>	\$151,038	\$60,497	\$28,609	\$9,295	\$175,904	\$40,295	
<b>Agriculture Table</b>	<b>\$20,608</b>	<b>\$7,359</b>	<b>\$6,042</b>	<b>-\$17</b>	<b>\$88,340</b>	<b>\$21,271</b>	<b>\$143,603</b>
Agriculture % of county	13.6	12.1	21.1	-0.2	50.2	38.1	
Rank in county	3	4	2	11	1	1	
County % of SLV	14.3	5.1	4.2	0.0	61.5	14.8	100.0
<b>Agricultural inputs</b>	<b>\$4,866</b>	<b>\$1,806</b>	<b>\$988</b>	<b>\$0</b>	<b>\$54,106</b>	<b>\$8,572</b>	<b>\$70,338</b>
% of total agriculture	23.6	24.5	16.3	0.0	61.2	40.3	50.0
County % of SLV	6.9	2.7	1.4	0.0	76.9	12.2	100.0
<b>Agricultural production</b>	<b>\$12,714</b>	<b>\$4,641</b>	<b>\$3,292</b>	<b>-\$17</b>	<b>\$20,765</b>	<b>\$10,500</b>	<b>\$51,929</b>
% of total agriculture	61.7	63.1	54.5	100.0	23.5	49.4	36.1
County % of SLV	24.5	8.9	6.3	0.0	40.0	20.2	100.0
<b>Agricultural processing</b>	<b>\$3,029</b>	<b>\$912</b>	<b>\$1,762</b>	<b>\$0</b>	<b>\$13,469</b>	<b>\$2,200</b>	<b>\$21,372</b>
% of total agriculture	14.7	12.4	29.2	0.0	15.2	10.3	14.9
County % of SLV	14.1	4.3	8.2	0.0	63.0	10.3	100.0

**San Luis Valley Total Base Employment - 13,399**  
**Agriculture - 5,571 %Total Basic - 41.6 Rank in Region - 1**

	Alamosa	Conejos	Costilla	Mineral	Rio Grande	Saguache	San Luis Valley
<b>Total Basic Employment</b>	4,691	2,489	1,217	351	5,192	2,237	
<b>Agriculture Table</b>	<b>1,021</b>	<b>676</b>	<b>352</b>	<b>3</b>	<b>2,489</b>	<b>1,030</b>	<b>5,571</b>
Agriculture % of county	21.7	27.2	28.9	0.8	47.9	46.0	
Rank in county	1	1	1	11	1	1	
County % of SLV	18.3	12.1	6.3	0.0	44.7	18.5	100.0
<b>Agricultural inputs</b>	<b>196</b>	<b>94</b>	<b>61</b>	<b>0</b>	<b>1,608</b>	<b>398</b>	<b>2,357</b>
% of total agriculture	19.2	13.9	17.3	0.0	64.6	38.6	42.3
County % of SLV	8.3	4.0	2.6	0.0	68.2	16.9	100.0
<b>Agricultural production</b>	<b>730</b>	<b>544</b>	<b>235</b>	<b>3</b>	<b>603</b>	<b>513</b>	<b>2,628</b>
% of total agriculture	71.5	80.5	66.8	100.0	24.2	49.8	47.2
County % of SLV	27.8	20.7	8.9	0.1	22.9	19.5	100.0
<b>Agricultural processing</b>	<b>95</b>	<b>38</b>	<b>56</b>	<b>0</b>	<b>277</b>	<b>119</b>	<b>585</b>
% of total agriculture	9.3	5.6	15.9	0.0	11.8	11.6	10.5
County % of SLV	16.2	6.5	9.6	0.0	47.4	20.3	100.0

Source: State Demography Section, 11/5/06.

**Table L-2**  
**Crop and Livestock Production, 2006**

	<u>Alamosa</u>	<u>Conejos</u>	<u>Costilla</u>	<u>Mineral</u>	<u>Rio Grande</u>
<b><u>2006 Crops</u></b>					
Barley -Acres harvested	5,400	3,000	1,600	-	7,800
-Yield (Bu./acre)	120.5	160	147	-	157
-Production (Bu.)	650,000	300,000	235,000	-	1,225,000
Hay, alfalfa -Acres Harvested	-	49,500	19,000	-	32,300
-Yield (tons/acre)	-	3.15	2.95	-	4
- Production (tons)	-	155,000	56,000	-	123,400
Hay, other -Acres Harvested	-	35,500	5,100	-	17,900
- Yield (tons/acre)	-	2.35	1.9	-	3
- Production (tons)	-	82,900	9,700	-	45,700
Potatoes, all -Acres Harvested	18,500	-	-	-	20,500
-Yield (Cwt. /acre)	375	-	-	-	385
-Production (Cwt.)	6,920,000	-	-	-	7,920,000
Wheat, all - Acres harvested	3,200	1,600	500	-	3,200
-Yield (Bu./acre)	90.5	83	108	-	112
- Production (Bu.)	289,000	133,000	54,000	-	359,000
<b><u>January 1, 2007 Inventory</u></b>					
All cattle & calves	8,500	24,000	6,000	-	13,500
Beef cows/ heifers that have calved	5,000	16,000	4,000	-	9,000
<b><u>Farm/ Ranch Information</u></b>					
Total land area (sq./mi.)	723	1,290	1,229	878	913
Total land area (acres)	462,854	825,741	786,801	562,021	584,382
<b><u>2002 Census of Agriculture</u></b>					
Number of Farms and Ranches	318	494	205	14	344
Farm & ranch land(acres)	204,640	267,708	354,067	4,436	170,999
Average size (acres)	644	542	1,727	317	497
Median size(acres)	320	240	170	350	280
Average value of land & buildings (Dollars)	\$719,503	\$398,956	\$846,998	\$606,000	\$899,346
Total cropland (acres)	111,194	138,281	69,789	322	110,868
Irrigated land (acres)	93,968	59,209	34,866	(D)	89,241
Market value of ag products sold (\$1,000)	\$94,451	\$22,852	\$26,245	\$166	\$74,783
All crops (\$1,000)	\$88,474	\$11,991	\$22,598	(D)	\$68,833
All Livestock(\$1,000)	\$5,978	\$10,861	\$3,647	(D)	\$5,650
Farm production Expenses (\$1,000)	\$62,157	\$20,185	\$17,846	\$288	\$53,789
Net cash return (\$1,000)	\$33,426	\$4,882	\$10,119	\$90	\$25,647
Ave. age of farm/ranch operator (yrs.)	51.7	53.9	53.7	65	54

**Table L-2 (Continued)**

	<u>Saguache</u>	<u>San Luis Valley</u>
<b><u>2006 Crops</u></b>		
Barley -Acres harvested	7,600	25,400
-Yield (Bu./acre)	162	143
-Production (Bu.)	1,230,000	3,640,000
Hay,alfalfa -Acres Harvested	34,000	134,800
-Yield (tons/acre)	4	3
- Production (tons)	124,000	458,400
Hay,other -Acres Harvested	40,500	99,000
- Yield (tons/acre)	2	2
- Production (tons)	76,600	214,900
Potatoes,all -Acres Harvested	15,600	54,600
-Yield (Cwt. /acre)	380	380
-Production (Cwt.)	5,930,000	20,770,000
Wheat, all - Acres harvested	5,300	1,380
-Yield (Bu./acre)	116	105
- Production (Bu.)	615,000	1,450,000
<b><u>January 1, 2007 Inventory</u></b>		
All cattle & calves	18,000	70,000
Beef cows/ heifers that have calved	11,000	45,000
<b><u>Farm/ Ranch Information</u></b>		
Total land area (sq./mi.)	3,168	8,201
Total land area (acres)	2,027,724	5,249,521
<b><u>2002 Census of Agriculture</u></b>		
Number of Farms and Ranches	252	1,627
Farm & ranch land(acres)	477,003	1,478,853
Average size (acres)	1,893	5,909
Median size(acres)	640	0
Average value of land & buildings (Dollars)	\$1,319,486	\$4,790,289
Total cropland (acres)	173,446	603,900
Irrigated land (acres)	91,025	368,309
Market value of ag products sold (\$1,000)	\$81,852	\$300,349
All crops (\$1,000)	\$71,022	\$262,918
All Livestock(\$1,000)	\$10,831	\$36,967
Farm production Expenses (\$1,000)	\$60,308	\$214,573
Net cash return (\$1,000)	\$24,040	\$98,204
Ave. age of farm/ranch operator (yrs.)	54	55

**Source:** 2006 Crops- National Agriculture Statistics Service, Colorado Agricultural Statistics, July 2007.  
Other Data- USDA, 2002 Census of Agriculture.

Table L-3

**Crop Production and Value, 2000-2006**

San Luis Valley Region

Field Crop	Year	Acres Harvested	Yield (Bu/acre) (Ton/acre)	Price (\$/bu) (\$/ton)	Production Value Per Acre	San Luis Valley Total Production Value
Spring Wheat	2000	32,000	86.5	\$2.70	\$234	\$7,474,000
	2001	24,700	102.0	\$2.72	\$277	\$6,853,000
	2002	18,000	111.0	\$3.63	\$403	\$7,253,000
	2003	11,000	74.0	\$3.32	\$246	\$2,702,000
	2004	10,500	95.0	\$3.29	\$313	\$3,282,000
	2005	12,200	94.5	\$3.90	\$369	\$4,502,000
	2006	13,800	105.0	\$5.10	\$536	\$7,390,000
Spring Barley	2000	76,000	131.5	\$3.08	\$405	\$30,782,000
	2001	58,000	120.5	\$2.73	\$329	\$19,080,000
	2002	48,500	117.0	\$3.04	\$356	\$17,520,000
	2003	52,500	123.0	\$3.05	\$375	\$19,695,000
	2004	51,500	134.0	\$2.82	\$378	\$19,461,000
	2005	38,000	158.5	\$2.98	\$472	\$17,949,000
	2006	24,500	143.5	\$2.90	\$416	\$10,196,000
Alfalfa Hay	2000	165,000	3.70	\$86.00	\$298	\$52,503,000
	2001	167,000	4.15	\$101.00	\$419	\$69,998,000
	2002	135,000	3.65	\$114.00	\$416	\$56,174,000
	2003	130,000	3.60	\$85.50	\$308	\$40,014,000
	2004	132,000	3.65	\$85.00	\$310	\$40,953,000
	2005	147,000	3.95	\$101.00	\$399	\$58,646,000
	2006	158,000	3.40	\$133.00	\$452	\$71,448,000
Other Hay	2000	84,000	1.65	\$82.00	\$135	\$11,365,000
	2001	96,000	1.85	\$99.00	\$183	\$17,582,000
	2002	75,000	1.75	\$136.00	\$238	\$17,850,000
	2003	100,000	1.55	\$95.00	\$147	\$14,700,000
	2004	120,000	1.25	\$80.00	\$100	\$12,000,000
	2005	110,000	1.25	\$98.00	\$123	\$13,475,000
	2006	108,000	2.20	\$124.00	\$273	\$29,462,000

Field Crop	Year	Acres Harvested	Yield (Cwt/acre)	Price (\$/Cwt)	Production Value Per Acre	San Luis Valley Total Production Value
Fall Potatoes	2000	75,600	370.00	\$2.95	\$1,092	\$82,517,000
	2001	67,800	315.00	\$9.65	\$3,008	\$206,095,000
	2002	71,500	390.00	\$6.25	\$2,438	\$174,381,000
	2003	65,700	360.00	\$4.55	\$1,638	\$107,617,000
	2004	64,300	370.00	\$4.55	\$1,684	\$108,249,000
	2005	58,000	395.00	\$8.65	\$3,417	\$198,399,000
	2006	59,700	380.00	\$8.40	\$3,192	\$190,562,000

Source: Colorado Agricultural Statistics, 2006; Prepared by Merlin A. Dillon, Area Extension Agent, Agronomy.

**Table L-4**

**Planting and Harvesting Dates**

Crop	Usual planting dates	Begin	Usual harvesting dates	
			Most active	End
<b><u>Field Crops</u></b>				
Barley, Spring season	Mar 15 - Apr 30	Jun-20	Jul 5- Sep 10	Sep-20
Spring wheat	Mar 25 - May 20	Jul-15	Aug 5 - Sep 25	Oct-1
Oats	Mar 20 - May 5	Jul-15	Jul 25 - Aug 30	Sep-20
Hay, Alfalfa	Jun-1	Jun-5	Oct-10	
Hay, Other	Jul-1	Jul 5 - Aug 10	Sep-25	
Fall Potatoes	Apr 25 - May 25	Sep-15	Oct 1 - Oct 10	Oct-20
<b><u>Vegetable Crops</u></b>				
Carrots	Apr 1 - Jul 5	Aug-1	Aug 15 - Mar 30	Dec-5
Lettuce	Mar 20 - Jul 10	Jun-10	Jun 15 - Sep 15	Oct-1
Spinach	Apr 1 - Jun 30	Jul-10	Jul 20 - Sep 20	Oct-5

**Source:** Colorado Department of Agriculture, Colorado Agricultural Statistics, 2001.

**Table L-5****Fall Potato Production - United States, 2006 Crop**

(Production = 1,000 Cwt)

	<u>1994</u>	<u>1994 Rank</u> <u>U.S.</u>	<u>2000</u>	<u>2000 Rank</u> <u>U.S.</u>	<u>2006</u>	<u>2006 Rank</u> <u>U.S.</u>
<b>Colorado - San Luis Valley</b>	<b>25,795</b>	<b>5</b>	<b>27,972</b>	<b>4</b>	<b>22,686</b>	<b>5</b>
California	5,600	11	3,741	11	3,870	11
Idaho	139,380	1	152,320	1	128,915	1
Maine	18,375	8	17,920	8	17,980	8
Michigan	14,910	9	14,963	9	14,190	9
Minnesota	20,035	7	21,600	7	20,400	6
New York	6,758	10	6,177	10	5,700	10
North Dakota	28,200	3	26,950	6	25,480	4
Oregon	27,514	4	27,200	5	18,533	7
Pennsylvania	3,780	12	3,510	12	2,730	12
Washington	88,920	2	103,250	2	89,900	2
Wisconsin	25,740	6	33,800	3	29,370	3

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**Source:** Colorado Potato Administrative Committee, 2001-2002 and 2007-2008 Fall Crop Market Policy Statements.



**Table L-6****Potato Acreage and Production By County, 2000-2006**

<u>County</u>	<u>Acres Harvested</u>	<u>Yield Per Acre (Cwt)</u>	<u>Production (Cwt)</u>
<b>2000</b>			
Alamosa	25,600	375	9,630,000
Conejos	1,000	370	372,000
Costilla	4,700	395	1,860,000
Rio Grande	24,900	370	9,220,000
Saguache	19,400	355	6,890,000
San Luis Valley	75,600		27,972,000
<b>2001</b>			
Alamosa	22,600	315	7,160,000
Conejos	1,000	300	300,000
Costilla	5,000	325	7,617,000
Rio Grande	22,500	310	6,970,000
Saguache	16,700	320	5,310,000
San Luis Valley	67,800		21,357,000
<b>2002</b>			
Alamosa	24,700	395	9,715,000
Conejos	1,000	345	345,000
Costilla	5,100	385	1,960,000
Rio Grande	22,700	400	9,045,000
Saguache	18,000	380	6,820,000
San Luis Valley	71,500		27,885,000
<b>2003</b>			
Alamosa	21,500	350	7,530,000
Conejos	1,100	345	382,000
Costilla	4,600	375	1,730,000
Rio Grande	21,100	370	7,820,000
Saguache	17,400	355	6,190,000
San Luis Valley	65,700		23,652,000
<b>2004</b>			
Alamosa	20,600	345	7,130,000
Conejos	1,500	345	517,500
Costilla	5,300	375	1,987,500
Rio Grande	21,000	385	7,910,000
Saguache	16,500	365	5,920,000
San Luis Valley	64,900		23,465,000
<b>2005</b>			
Alamosa	17,445	400	6,890,000
Conejos	960	355	34,000
Costilla	4,130	355	1,470,000
Rio Grande	20,500	400	8,220,000
Saguache	15,075	395	5,960,000
San Luis Valley	58,100		22,574,000
<b>2006</b>			
Alamosa	18,500	375	6,920,000
Conejos	600	375	22,500
Costilla	4,500	375	1,687,500
Rio Grande	20,500	385	7,920,000
Saguache	15,600	380	5,930,000
San Luis Valley	59,700		22,680,000

**Source:** Colorado Potato Administrative Committee, 2007-2008 Fall Crop Market Policy Statement.

**Table L-7**

**Potato Crop Utilization, 2000-2007 Fall Crop**

<b><u>Grade/ Utilization</u></b>	<b><u>Production (Cwt)</u></b>	<b><u>Pct %</u></b>
U.S. No. 1 Quality	10,405,196	45.9
U.S. Commercial Grade	3,913,534	17.3
U.S. No. 2 Quality	974,688	4.3
Specialty (Fingerling)	113,339	0.5
Certified Seed (outside SLV)	766,684	3.4
Local Processing	849,766	3.7
Out of Area Proc. (C. of P)	1,873,539	8.2
Seed to plant 59,200 acres*	1,243,200	5.5
Farm use, Shrink, livestock	<u>2,546,054</u>	11.2
<b>USDA Production Estimate</b>	<b>22,686,000</b>	<b>100.0</b>

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**Source:** Colorado Potato Administrative Committee, 2007-2008 Market Policy Statement.

\*Includes 445,978/ Cwt certified seed.

**Table L-8**

**Potato Shipments and Average F.O.B. Prices for 2006-2007 Crop**

	<b>September 2006</b>	<b>March 2007</b>	<b>August 2007</b>
<b>Percent of Crop</b>			
Reds	2.5	3.4	0.1
All Russet Varieties	93.3	85.9	99.6
Yellows	2.3	1.6	0
Other Varieties	2	9.2	0.3
<b>Percent of Crop</b>			
U.S. No. 1	71.5	56.4	66.3
U.S. No. 2	3.9	5	14.9
U.S. Commercial Grade	24	22	18.7
<b>Percent of Crop</b>			
Seed	0.9	16.3	0
Bulk	41.6	44.7	23.8
<b>Shipments (480 Cwt equivalent)</b>			
Total rail shipments	2,225	4,016	837
Total truck shipments (fresh)	84	184	59
Total truck shipments (processing)	1,977	3,473	538
Total shipments for the year to date	164	359	240
	2,225	23,087	37,365
	<b>September 2007</b>	<b>March 2007</b>	<b>July 2007*</b>
<b>Average F.O.B. Prices (per 50 lb. carton or bale unless noted)</b>			
Reds U.S. #1 2+3"	\$14.50	N/A	N/A
Reds U.S. #1 size B	\$18.50	N/A	N/A
Yukon Gold #5	\$9.50	N/A	N/A
All Russets U.S. #1, non-size A	\$6.00	\$5.55	\$5.02
All Russets U.S. #2 100 lbs	N/A	\$4.58	\$3.91
All Russets 10 oz. Minimum	N/A	N/A	N/A
Bulk Russets U.S. Commercial Grade 1C	\$7.44	\$7.38	\$7.75

**Source:** Colorado Potato Administrative Committee, 2007-2008 Fall Crop Market Policy Report.

\*Pricing data not available for the month of August which would be the last month of the season. July pricing data used in lieu of August.