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Colorado Agriculture Is on a Rough Road

It is going to be a tough couple of years for Colorado agriculture. Farmers and ranchers who were in a good financial situation heading into 2016 will weather this current downturn, but the effects of low cattle and grain prices will reverberate throughout Colorado's economy. Already, implement dealers have closed, agricultural lenders are reporting increases in nonperforming loans, and land prices, which had climbed substantially in recent years, have begun to moderate.

Colorado's net farm and ranch income is projected to fall to $444 million in 2016, well below the nearly $1.3 billion reported in 2015 and the lowest since 1986. The forecast for 2017 does not present a rosier picture, with a further drop in net income, to $392 million. Colorado had a record-high net farm income of $1.8 billion in 2011.

Colorado farms and ranches face a far different outlook than just a few years ago. Profits in the largest sectors, cattle and small grains, are the lowest in years, and farm incomes will take a hit. While some production costs, such as fuel and fertilizer, are lower, they do not sufficiently counterbalance cattle prices, which are currently averaging 17% less than last year's season average price, and are forecast to drop further in 2017.

According to statistics from the Global Trade Atlas (State Edition), exports of Colorado food and agricultural products reached a high of about $1.8 billion in 2014. Exports have since declined, based on the relative strength of the U.S. dollar compared to other currencies but the longer-term growth of exports of Colorado food and agricultural products has been significant, increasing by 375% in the past two decades. The International Trade Administration reports that every dollar of exports creates another $1.40 of economic activity and every $1 billion of exports supports some 5,000 jobs.

Exports are not forecast to rebound quickly because of the strength of the dollar and shakiness of the rest of the world's economy compared to the United States. However, food and agricultural interests stand to benefit in the longer-term from the proposed Trans-Pacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (T-TIP) trade agreements. These agreements would increase access and decrease import tariffs on products important to Colorado, such as beef, wheat, and dairy products. China has also signaled a willingness to begin discussions that could potentially open its markets to U.S. beef for the first time since 2003.

Huge returns in recent years provided the motivation to aggressively expand the U.S. beef herd. The economic stage has quickly changed, but the adjustment in cattle numbers is just starting. Other protein sources, such as chicken and pork, whose retail prices have dropped quickly, are now more attractive to consumers.

Negative returns have made cattle feeders reluctant to bid aggressively for feeder animals, even as the prices of corn and other feed sources fell, as they are still raising animals they bought at higher prices and are now forced to sell at very low profit levels—or even a loss. Lower prices are, however, leading to better export numbers for beef.

The share of heifers being sold as feeder cattle is beginning to increase, indicating that breeding herd expansion is slowing earlier than expected.

Prices for wheat and corn are hitting lows not seen for more than 10 years. Both corn and wheat prices are below farmers' cost of production. Wheat and corn prices are expected to rebound slightly in 2017.

A factor that is hard to quantify in farm receipts is income from energy leases, such as oil and gas royalties and wind farm leases. These monies are often a

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COLORADO FARM INCOME AND PRODUCTION EXPENSES 2008–2017 (In Millions of Dollars)

Year	Gross Value of Farm Revenue	Total Farm Production Expenses	Net Farm Income
2008	$6,989.6	$5,882.4	$1,107.2
2009	6,910.1	6,044.2	865.9
2010	7,089.6	5,856.2	1,122.2
2011	8,485.5	6,650.0	1,828.1
2012	8,340.6	7,003.2	1,269.4
2013	8,551.6	7,211.0	1,340.6
2014	9,087.2	7,942.7	1,144.5
2015	8,794.3	7,500.0	1,294.3
2016[a]	7,244.4	6,800.0	444.4
2017[b]	7,141.8	6,750.0	391.8

[a]Estimated.

[b]Forecast.

Source: Colorado Business Economic Outlook Agriculture Committee.

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significant source of income to farm and ranch families when commodity prices are low, but current depressed oil and gas prices have led to a decrease in these revenues as well. An estimated 10,000 Colorado farmers and ranchers have oil and gas wells on their property, although they may not own the mineral rights. Wind turbine lease payments, which are stable and do not fluctuate like oil and gas royalties, accounted for $9 million in payments to all Colorado landowners in 2015 (*Denver Post,* March 25, 2016).

Urban and small acreage farms are growing in number. In aggregate, they might not contribute huge volumes of production but they are helping meet the demand among chefs for more local produce and create new linkages between agriculture and consumers. The emergence and growth of nontraditional food production is creating more diversity in Colorado food systems.

Cattle Prices Continue Slide from Record Highs

Livestock continue to make up the largest share of Colorado's agriculture economy, accounting for 65% of estimated cash receipts in 2016. While cash receipts declined overall, livestock continued to hold about the same share.

Prices for steers and heifers reached a record high in 2014, but have been dropping ever since and do not look any more favorable for 2017. The 2016 season average prices for steers and heifers is estimated at $123 per hundredweight (cwt), and the 2017 season average price for steers and heifers is forecast at $117 per cwt, the lowest since 2010, and a 21% drop from 2014 prices that averaged $148 per cwt. These reduced prices reflect the rebuilding of the U.S. cattle herd after years of drought and the resulting higher supply of cattle and beef to purchase. Lower corn and hay prices and improved grazing conditions gave ranchers the opportunity to increase their herds, but returns per animal will not be as high as they were just a few years ago.

Colorado fed cattle numbers are projected to rebound slowly, from the 2015 record low of 1.6 million to 1.67 million in 2016 and 1.7 million in 2017.

Colorado **hog** numbers are down as pork prices continue to decline despite lower corn prices. High prices caused by the porcine epidemic diarrhea virus (PEDV) in other parts of the country led to optimistic rebuilding of the herd, increasing the available supply and reducing prices. Colorado hog producers will see cash receipts drop to $165 million in 2016 and $160 million in 2017 due to less production.

Feed costs for **dairy** producers are down, giving them a rather stable price environment, although milk prices are down and close to the break-even point for most farmers. The bright spot for dairy farmers is that the rest of world has been adjusting milk production down, so U.S. exports are up, supporting prices beyond those supported by U.S. consumption alone.

Sheep prices performed better than expected in 2016. Lamb feeding may continue to rebound into 2017. Lamb and sheep are experiencing little to no price declines in contrast to other sectors. Imports from Australia are down in part to drought conditions there, allowing U.S. lamb to capture a larger share of the U.S. market.

Egg prices have not just settled but have hit their lowest level in six years, with eggs now in surplus as farmers rebuilt the U.S. flock after avian flu. Colorado egg producers maintain a flock of about 4.5 million hens, slightly less than one hen per Colorado resident, and produce 1.2 billion eggs annually.

Commodity Oversupply

The story across Colorado and the rest of the nation for corn is high yields and low prices. Lower prices increase demand for corn in the ethanol and export markets, as well as for use as feed. This increased demand has not

VALUE ADDED BY COLORADO AGRICULTURAL SECTOR
2008–2017
(In Millions of Dollars)

Year	Livestock	Crops	Total Value of Production	Value of Services and Forestry[a]	Government Payments[b]	Gross Value of Farm Revenue
2008	$3,844.3	$2,166.4	$6,010.7	$717.9	$261.0	$6,989.6
2009	3,462.9	2,249.3	5,712.2	1,006.1	191.8	6,910.1
2010	3,831.1	2,249.3	6,080.4	737.6	271.6	7,089.6
2011	4,320.2	2,740.8	7,061.0	1,189.1	235.4	8,485.5
2012	4,490.7	2,577.3	7,068.0	1,056.9	215.7	8,340.6
2013	4,682.4	2,284.6	6,967.0	1,345.6	239.0	8,551.6
2014	5,322.4	2,425.8	7,748.2	1,053.1	285.9	9,087.2
2015	5,501.0	2,145.3	7,646.3	929.4	218.6	8,794.3
2016[c]	4,131.4	1,963.0	6,094.4	950.0	200.0	7,244.4
2017[d]	4,074.9	1,871.9	5,946.8	975.0	220.0	7,141.8

[a]Includes sales of forest products, custom feeding fees, custom harvest fees, and other farm income. [b]Includes farm program payments directly to producers. [c]Estimated. [d]Forecast.

Source: Colorado Business Economic Outlook Committee.

brought about higher prices as corn production is up because of higher yields across the United States.

Corn production in Colorado for 2016 is forecast at 164.2 million bushels, up 22% from 135 million bushels the previous year, and the U.S. corn crop is projected to be a record 15.2 billion bushels. Prices dropped from $3.70 a bushel in 2015 to an estimated $3.15 per bushel in 2016, with a projected slight upturn in 2017, to $3.40, still less than half of the 10-year high corn price of $6.86 per bushel in 2012.

Despite projected lower prices, Colorado farmers still planted more acres of corn in 2016 than they did in 2015. Colorado corn producers are projected to harvest 1.20 million acres in 2016—240,000 acres more than the 950,000 acres harvested in 2015.

Colorado **wheat** farmers completed a record-breaking harvest in 2016, gleaning 105 million bushels of wheat compared to 81 million bushels in 2015. Although planted and harvested acres declined, timely rains and good growing conditions pushed winter wheat to a record-high yield of 48 bushels per acre. Slightly fewer wheat acres are projected for 2017, mostly due to farmers' regular crop rotation. Wheat does have the advantage of lower input costs than corn, although most wheat is projected to be sold at below the cost of production in 2016.

Wheat prices, already down to an estimated $3.25 for 2016 from $4.30 in 2015, are projected to rebound slightly, to a season average of $4.00 in 2017. Total cash receipts from wheat in Colorado are projected to decline from $359 million in 2015 to an estimated $342 million in 2016 and a projected $321 million in 2017. Lower prices have made U.S. wheat more competitive on the export market, but other countries also are awash in wheat and can provide better values to importers because of the relatively strong position of the U.S. dollar. A 29-year high in U.S. wheat stocks and high worldwide wheat stocks do not offer a rosy outlook in the near future for wheat prices.

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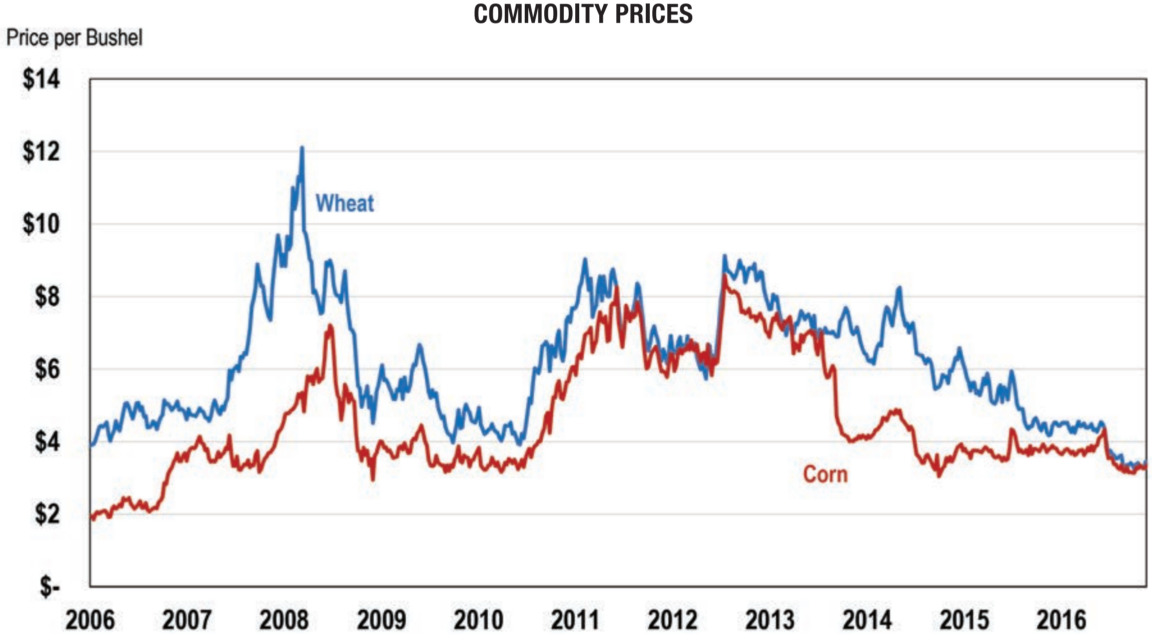

Sources: Bloomberg (USDA Toledo No.2 Yellow Corn Not on the River Spot Price, USDA No. 1 Hard Red Winter Wheat Spot Price/Kansas City Missouri). As of 11/21/16.

Hay prices continue to be significantly down from the highs seen when the United States was experiencing widespread drought. Production remained steady in 2016 and is expected to decrease slightly in 2017 as prices fall from $179 per ton in 2015 to an estimated $150 per ton in 2016 and a projected $145 per ton in 2017.

Colorado breweries continue to demand quality malting **barley.** Barley farmers harvested 74,000 acres of barley in 2016, up 11,000 acres from 2015, and production is estimated at 9.55 million bushels, up 17% from 2015. Barley prices are estimated to be lower for 2016, down to $4.75 per bushel from $6.20 in 2015, and to remain steady, at $4.75, in 2017 as production increases. Barley that does not meet quality standards for malting is sold as livestock feed at a much lower price.

Prices for Colorado **dry beans** are highly dependent on how much of the crop is exported to Mexico. If Mexican farmers have a poor bean crop, Mexico imports more Colorado beans. The average price for dry beans for 2016 is estimated to be $29 per bushel, down slightly from $30.20 in 2015. The price for 2017 is forecast to slip to $24 per bushel. Production is expected to increase as demand is currently good, and some acres are moved away from irrigated corn.

Consolidation in the retail market has created some price stabilization for **potatoes.** Large retailers, such as Kroger, Safeway, and Walmart, now purchase their potatoes on a contract price that is renegotiated every three months, providing a more stable price structure for the industry. The cash receipts for 2016 for the Colorado potato industry are estimated at $151 million, down from $165

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million in 2015, and they are forecast to fall, to $148 million, in 2017. A favorable price differential in 2015 elevated potato exports to Mexico, which were down slightly for the first six months of 2016.

Colorado **sweet corn** had a good year in 2015 with an average crop and good prices. A steady stream of trucks left the Western Slope loaded with corn and demand was high enough that farmers were unable to fill all the orders at the end of the season. There was less loss to weather, insect pressure, and disease than usual.

Sunflower production in 2016 is up 12% from 2015 because of higher yields. Colorado remains the largest U.S. producer of millet, but farmers are not likely to increase millet acreage because its profitability is not expected to be greater than wheat or corn, even at their lower current prices.

Grape production was above average but not as large as 2015's bumper crop. The crop was undamaged by spring frosts in 2016, and hot weather in mid-summer allowed early ripening in some areas and varieties.

Western Slope **peach** growers had another strong year, with little hail damage and no significant frost affecting the crop. Cash receipts from fruit, including peaches, apples, and pears, are estimated to increase to $31 million in 2016, up from $26 million in 2015.

Detrimental weather continues to prevent maximum yields of Colorado **melon** and **cantaloupe.** Early hail took out a few acres in the spring, and high humidity and dew levels later in the season caused powdery mildew in some melon fields. Still, the cantaloupe, honeydew, and watermelon crop was slightly larger than in 2015, with somewhat more harvested acres and yields, and prices similar to that year. Farmers will base production decisions for 2017 on snow pack in the mountains in the winter and its contribution to available irrigation water.

Colorado's **green industry** is a bright spot for the agriculture economy as Colorado's population continues to increase and new homes are built, requiring sod, trees, and plants for landscaping. Cash receipts from the nursery and greenhouse industry are estimated at $314 million for 2016 and projected at $336 million for 2017. Receipts were $293 million in 2015.

Colorado farmers planted 5,800 acres of industrial **hemp** in 2016, nearly half of the industrial hemp planted in the United States. As of November 2016, it is difficult to estimate the value of this crop as different varieties are planted for different end uses, and it is not certain what the end market for all Colorado hemp will be. However, to put this into perspective, acres planted to industrial hemp in Colorado in 2016 was 10 times greater than acreage planted to cantaloupe and about double the acres in orchards that produce peaches.

Government payments to producers continued a recent downward trend in 2016, to $200 million from $219 million in 2015, but are expected to increase in 2017 as Agricultural Risk Coverage and Price Loss Coverage programs kick in for wheat and corn growers.

Total cash receipts to farmers and ranchers are expected to decline in 2016 and 2017 while expenses decrease modestly. Interest rates remain low, and fuel prices are at lower levels than a few years ago. Lower commodity prices are also bringing some downward adjustments in land costs. Farmers of all Colorado crops will need to be aware of their costs of production and practice cost control where they can. Near-term growth opportunities appear to not be in traditional commodity agriculture, but in niche products and value-added agriculture.

While the outlook for 2017 is anything but rosy, Colorado agriculture is in a relatively better place than much of the country. In September 2016, USDA's Economic Research Service reported that Colorado cash receipts had declined from $7.6 billion in 2014 to $7.4 billion for 2015—a decrease of only about 3% compared to a more than 10% decrease at the national level. Compared to Colorado, other states (especially the Midwestern corn-growing states, such as Iowa) had a higher ratio of crops versus livestock, and livestock was doing fairly well during those years. In addition, Colorado's agriculture sector is diverse. Similarly, Colorado did better than the national benchmark in 2014 when cash receipts rose 8.6% compared to 5.1%.

This is of little or no comfort to farmers and ranchers facing significantly less income while their expenses remain about the same. Diversification may be a solution, but in much of Colorado, there is insufficient water to grow different crops than those traditionally planted. Farmers and ranchers who cut costs to make it through the next one or two challenging years will certainly see an upturn in the future, but those facing the strongest headwinds are newer farmers with less capitalization. Established operations, if they planned well for future adversity while enjoying times of prosperity, should again weather this economic storm as they have downturns in the past.

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