

**Economic impact of future federal conservation easement investments on
(rural) Colorado communities**

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- Investment in Colorado’s currently pending agricultural conservation easement projects could generate \$195 million in new economic activity in the state.
- This new economic activity creates 1,233 new jobs at an average wage of \$50 thousand per year and \$97 million in additional economic value (e.g., profits, wages, interest, rent, taxes) in Colorado.
- Financial stimulus of this kind is of critical importance now in view of the effects of the current public health pandemic on the financial health of the agriculture sector.
- A dozen Colorado land trusts have a current and pending project portfolio of 151 properties comprising 185,395 acres of Colorado private working landscapes with an estimated conservation easement value of about \$325 million.
- 74% of the properties, 83% of the acreage, and 69% of the easement value are located in rural Colorado counties.
- State and private match funds create additional stimulus in rural areas due to redistribution from urban to rural communities resulting from the population size and relative wealth of urban areas and the rural location of most agricultural properties.
- This financial injection provides an important source of debt service and risk mitigation support for rural landowners and stimulus to rural communities
- It is reasonable to expect similar effects of investments in conservation easements in other states.

Summary:

This policy brief aims to increase understanding of expenditure patterns and economic impacts stemming from \$88.9 million federal agricultural conservation easement program payments to the state of Colorado. An anticipated \$195 million in generated economic activity and more than 1,200 jobs from federal agricultural conservation easement payments is a sizable and important contribution to the state. Anticipated easement payments will provide an important source of farm debt reduction, savings and risk mitigation in these increasingly uncertain times. Easement programs disproportionately benefit rural counties where economic opportunity, employment and safety nets are less diverse and less robust. These results broadly transfer to other states and rural economies. Activating federal funding to convert 151 pending projects totaling 185 thousand acres of Colorado’s working landscapes into completed transactions can make this important economic infusion a reality.

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1. Introduction

Federal payments are economic stimulus from the perspective of the state economy. Between 2009 and 2017, federal Farm Bill investments in conservation easements in Colorado totaled some \$80 million in 2018 inflation-adjusted dollars to support the conservation of more than 129,000 acres of farm and ranch lands. In anticipation of the 2018 Farm Bill debate, the Colorado land trust community collaborated with Colorado State University to understand better the economic stimulus created by Farm Bill conservation easement programs in Colorado. In Seidl et al. (2018) we reported the estimated economic impact of federal conservation easement payments to Colorado farmers and ranchers over the past two Farm Bills (2009-17) with particular focus on rural communities in the state.²

This brief policy analysis details our best estimate of the likely economic effect of additional federal investments in Colorado private lands conservation based upon projects currently active but incomplete within the Colorado land trust community's portfolio. We anticipate the results of this economic impact analysis will help to inform the discussion of the importance of these programs to the Colorado economy, particularly its rural communities.

2. Results of the 2018 Study:

In order to estimate the total economic impact activity generated, we used survey information to estimate how conservation easement recipients spend (or save) payments and the impact on the relevant sectors that have received injections of funds as a result of those expenditures. The response to financial stimulus can be traced through direct, indirect and induced spending in the state. The direct effect is an initial increase in spending by easement payment recipients on goods and services. The indirect effect is the increase in demand for the items required to create those goods and services implied by the direct spending. For example, an increase in agricultural demand might cause farmers and ranchers to hire temporary labor or the bank to hire additional loan agents when debt service payments increase. The induced effect is what the additional farm laborers and loan agents do with the income increase (e.g., purchase a car, groceries, or a trumpet). That additional income is reintroduced into the economy as demand for other goods and services and is induced by the original stimulus into the agriculture and banking sectors. The total effect is the sum of the direct, indirect and induced effects.

Survey responses showed that the majority of federal conservation easement compensation was invested in debt payments (52.1%), followed by saving (16.6%), and re-investment in production agriculture (16.1%). These results are in broad agreement with the literature.³ Debt repayment is the most frequently reported investment category, with 63.6% of easement holders reporting using some portion of their easement payment on debt reduction and 36.4% indicated that they put some of the money into savings. Respondents spent more than \$55.8 million dollars in debt repayment and contributions to savings which stimulated the banking sector.

Some 52.3% of respondents indicated that they reinvested at least some of their easement compensation back into their agricultural operation. Our survey showed 37.2% of federal conservation easement program participants in Colorado changed their agricultural practices in some way due to the easement payment including: improved irrigation (27.9%), increased acreage (14%), and changes in crop mix and rotation (2.3%). Some 9.3% of survey respondents noted an improvement in their yields attributable to participation in the Agricultural Conservation Easement Program (ACEP) or its predecessor programs and 11.6% of respondents indicated that they added outdoor recreation opportunities to their operations, for a total reported increase of 255 recreation days.

² Estimated Economic Impact of Federal Agricultural Conservation Easement Programs (ACEP) on Colorado, 2009-2017: Summary. 2018. Andrew Seidl, Ryan Swartzentruber, Rebecca Hill. July 2018. 2 pp. <https://dspace.library.colostate.edu/handle/10217/190079>

Estimated Economic Impact of Federal Agricultural Conservation Easement Programs (ACEP) on Colorado, 2009-2017. 2018. Andrew Seidl, Ryan Swartzentruber, Rebecca Hill. July 2018. 32 pp. <https://dspace.library.colostate.edu/handle/10217/190078>

³ See, for example, Clark (2010), Esseks et al. (2013), Duke and Ilvento (2004).

Using these survey results we estimated that over the last two Farm Bills the almost \$80 million (2018) in federal conservation easement payments to Colorado producers generated more than \$174 million in new economic activity in the state, associated with the creation of 1,102 Colorado jobs and almost \$86 million in additional economic value (e.g., profits, wages, interest, rent, taxes). For every dollar of federal conservation easement investment in Colorado, \$2.19 of new economic activity is generated.

Land trusts leverage federal dollars to receive local, state, or private dollars. In Colorado, the average federal conservation easement payment was \$540,932, with an average of 1,357 acres enrolled or \$399 per acre. The average non-federal match was \$1,070,082 for a rate of leverage on federal investment of about 2 to 1. We found \$36 million (2018\$) in federal easement program funds were used to leverage \$69 million of local, state, or private funds.

We found our sample is predominantly rural, with 70% of federally supported easement acreage, 82% of direct federal expenditures and 67.5% of total economic impact going to rural counties (Rural-Urban Continuum Code 4-9⁴). Although we do not have data to support this, it stands to reason that the majority of state and private leverage funds come from urban sources (e.g., taxpayers, donor organizations) and are reinvested in rural areas at the same rate as federal funds. The redistribution of dollars from urban centers to the more rural areas could have important implications on the health of rural economies. This is a substantial injection of dollars largely going to rural Colorado communities in support of a vibrant and robust agricultural economy.

3. Descriptive analysis of the 2020 data

A dozen active members of the Colorado land trust community⁵ contributed data on their current and pending projects for this analysis. Although there are a few gaps in the dataset, in total the owners of 151 properties comprising 185,395 acres of Colorado private working landscapes are actively pursuing conservation easement agreements with these land trusts. The maximum parcel size in the database is about 15 thousand acres, the minimum is 6 acres, and the average is about 1,200 acres. The total estimated value of conservation easements on 132 of these properties is approximately \$204 million with a maximum of more than \$10 million and a minimum of \$50,000 for an average of \$1.5 million per parcel and \$4,592 per acre (Table 1).

	Total	Maximum	Minimum	Mean	Median
Acres (n = 151 parcels)	185,395	14,816	6	1,228	440
Easement value (\$) (n = 132 parcels)	203,849,830	10,186,160	50,000	1,544,317	1,000,000
Easement value per acre (n = 132 parcels)		61,538	188	4,592	1,749

For illustrative purposes, if we can assume the 19 properties for which we do not have valuation information are typical of the median value of the data set (since the mean indicates there is a subset of very highly valued properties), we can scale the estimated conservation easement value for the entire 151 property dataset to about \$325 million. In comparison, Seidl et al. (2018) analyzed 122 easement transactions covering 128,710 acres and \$74.5 million in federal program payments over the decade to 2017. The average property enrolled was identical in size to the current analysis at about 1,190 acres and the federal program payment received per acre was about \$424 per acre on average.

⁴ Rural Urban Continuum Code: <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx#U0VBhleG-Hs>

⁵ Aspen Valley Land Trust, Colorado Cattlemen’s Agricultural Land Trust, Colorado Open Lands, Colorado West Land Trust, Douglass County Land Trust, Eagle Valley Land Trust, Montezuma Land Trust, Mountain Area Land Trust, Palmer Land Trust, Rio Grande Headwaters Land Trust, Southern Plains Land Trust, and the Trust for Public Lands.

Some 74% of the properties, 83% of the acreage, and 69% of the easement value are in rural Colorado counties, similar to the 2018 study (Table 2). This finding supports the contention that federally supported agricultural conservation easement funds are used for the environmental public good ecosystem services generated from agricultural lands in rural counties, rather than as an urban planning or growth management tool.

Table 2: Acreage, value and number of potential private lands conservation properties by county and rural-urban continuum code

County	Acres	Value (2020\$)	Properties	RUCC
Conejos	6,905	6,210,462	8	9
Costilla	1,268	1,728,534	6	9
Mineral	740	3,080,000	4	9
Rio Blanco	13,905	11,767,000	6	9
Saguache	10,136	5,670,000	5	9
San Miguel	9,628	10,581,160	3	9
Bent	19,247	596,520	3	7
Chaffee	975	4,812,200	3	7
Gunnison	5,341	15,039,000	13	7
Moffat	43,051	20,566,275	8	7
Rio Grande	3,072	5,628,000	6	7
Routt	10,980	16,911,449	9	7
Delta	4,247	5,487,150	5	6
Eagle	472	5,000,000	4	5
Garfield	1,760	12,725,000	8	5
Freemont	6,037	5,116,750	3	4
Mesa	1,917	3,859,625	5	3
Pueblo	6,542	5,920,800	5	3
Larimer	846	15,100,000	6	2
Douglas	5,887	8,800,000	7	1
Jefferson	173	4,000,000	3	1
Park	5,026	16,466,500	9	1
Total	158,156	185,066,425	129	

Note: Due to disclosure issues (fewer than 3 properties in a county) data from 22 properties totaling 27,238 acres with conservation easement values totaling \$1.9 million from Alamosa, Archuleta, Clear Creek, El Paso, Elbert, Grand, Hinsdale, Montezuma, Montrose, Morgan, Ouray, Pitkin, Sedgwick, and Summit counties were suppressed. Five of these properties were in Clear Creek, Elbert and El Paso ‘urban’ counties (RUCC 1-3), totaling 10 thousand acres and carrying a conservation easement value of \$9 million.

4. Using the 2018 Study to Project Anticipated Impacts of Future Federal Conservation Investments

To capture the likely anticipated impacts of future federal conservation easement impacts we scale our 2018 report to capture 185,394 additional acres of private lands protected. Landowners will not receive federal program payments equal to the value of the conservation easement. Federal tax deductions and state tax credits for the donated portion of the value of the easement and state and local matching funds bridge the gap between federal program payments and easement value. Seidl et al. (2018) found an estimated 2:1 match of state to federal sources of support. Using these proportions, we can estimate the direct injection of federal conservation easement

program funds as approximately 1/3 the total easement value or \$76,270,444 over 159,134 acres or about \$480 per acre. Scaled to the current and pending acreage of 185,394 acres, we will model the effect of a future injection of \$88.9 million in federal conservation program funds on the Colorado economy.

Expenditure Category	Estimated direct expenditure (\$)	Percentage of total expenditures (%)
Investment in Agriculture	13.4 million	15.11
Diversification	980,000	1.10
Land Purchase/Real estate	11.7 million	13.22
Savings	15.4 million	17.32
Debt	46 million	51.74
Non-business related goods	80,000	0.09
Education	187,000	0.21
Other/Charity	1.1 million	1.20

Table 3 illustrates the likely use of federal conservation easement funds by payment recipients based on a 2018 survey of such recipients. These expenditures are injections of new funds into the economy and result in stimulus to the industries associated with the expenditures. The banking sector is affected most directly by the easement payments, as debt repayment and savings accounted for 69% of all conservation easement expenditures by payment recipients. Clearly this financial injection of federal, state and private funds provides an important source of debt service and risk mitigation support for rural landowners and stimulus to rural communities. Investments in debt reduction not only create economic stimulus, but also provide a safety net or buffer and flexibility to react against unforeseen short-term economic shocks such as drought, fire and the global health crisis.

Overall, the agriculture sector has progressed from alarming debt-to-asset ratios upwards of 20% in the 1980s to an average of about 13.5% in early 2020.⁶ Unfortunately, the global health pandemic has disrupted agricultural supply chains and has reduced demand in important ways, putting additional financial stress on the sector. Livestock and crop harvest capacity has reduced due to labor issues⁷ and the introduction of additional disease spread risk mitigation measures in processing plants and crop harvesting practices.⁸ The reduction in fuel and feed prices, and the federal Coronavirus Food Assistance Program (CFAP)⁹ can provide some relief, but the strongly curtailed consumer demand drivers (e.g., crashing restaurant and institutional sales, waning or halted export markets¹⁰) of lower input prices quickly countermand any cost savings with revenue declines.¹¹ Stories of euthanized pigs, dumped milk and crops plowed under featured in national headlines in April and May 2020.^{12 13}

⁶ McGinnis, M. 2020. Covid-19 puts ag financial concerns under a microscope. Successful Farming.3/27/2020 <https://www.agriculture.com/news/business/covid-19-puts-ag-financial-concerns-under-a-microscope>

⁷ Purdue Food and Agriculture Vulnerability Index. 2020. <https://ag.purdue.edu/agecon/Pages/FoodandAgVulnerabilityIndex.aspx>

⁸ Coronavirus Disease 2019 (COVID-19) Resources. 2020. COVID-19 Dashboard from the Nebraska Department of Health and Human Services<https://nda.nebraska.gov/COVID-19/>

⁹ Coronavirus Food Assistance Program. 2020. <https://www.farmers.gov/cfap>

¹⁰ Glauber, J. 2020. USA: Trade concerns for the rest of 2020 include COVID-19, China. May 11, 2020. <https://www.agomeat.com/293105/ee-uu-las-preocupaciones-comerciales-para-el-resto-de-2020-incluyen-covid-19-china>

¹¹ Virginia Farm Bureau. 2020. Livestock farmers warned to brace for hard times ahead. June 7, 2020. <https://www.morningagclips.com/livestock-farmers-warned-to-brace-for-hard-times-ahead/>

¹² Mak, T. 2020. Millions of pigs will be euthanized as pandemic cripples meatpacking plants. NPR: Morning Edition. May 14, 2020. <https://www.npr.org/2020/05/14/855662494/millions-of-pigs-will-be-euthanized-as-pandemic-cripples-meatpacking-plants>

While the actual impact of covid-19 on the agriculture sector can only be known in retrospect and, likely, with substantial delay due to unprecedented disruption in the work of the Economic Research Service (ERS)¹⁴, one recent estimate projects economic damages to the US beef cattle industry due to COVID-19 at \$13.6 billion by the end of 2021.¹⁵

To the extent that state and private match funds create additional stimulus in rural areas due to redistribution from urban to rural communities, these effects may be further magnified in rural counties. Since over 87 percent of Colorado’s population lives in urban counties,¹⁶ and urban counties tend to have higher mean incomes than rural counties, it is reasonable to expect the great majority of state and private match funds originate in urban areas.

Table 4 shows the top 10 affected industries from \$88.9 million in new federal money spent or invested in the pattern illustrated in Table 4. Sectors associated with direct spending, such as agricultural reinvestment and retail sectors, ranked in the top ten along with banking and real estate. Due to the multiplier effects of the easement payment spending many of the sectors in the top ten are not areas where direct payment expenditures occurred. The industrial sectors that experience relatively large effects all have linkages to the banking sector including wholesale trade, insurance carriers and data processing.

Description	Employment (FTE)	Labor Income (\$)	Value Added (\$)	Output (\$)
Banking sector	441	27,428,846	34,408,008	78,448,930
Real estate	112	2,052,824	13,979,894	20,570,589
Ag reinvestment	127	3,124,552	3,797,403	15,951,600
Owner-occupied dwellings	-	-	3,366,553	5,189,914
Retail	54	1,733,358	2,808,978	4,404,130
Insurance agencies, brokerages, & related activities	24	1,401,996	1,752,579	4,026,771
Wholesale trade	16	1,419,624	2,440,500	3,758,228
Management of companies & enterprises	13	1,787,479	2,120,919	3,408,540
Insurance carriers	6	648,458	1,210,393	2,559,448
Data processing, hosting, & related services	8	899,407	950,166	2,440,275

In sum, \$89.9 million in federal agricultural conservation easement program spending would be expected to create about \$195 million in new economic activity to the state of Colorado (Table 5). The \$195 million in new economic activity would likely create at least 1,233 new jobs at an average wage of over \$50 thousand per year and \$97 million in additional economic value in Colorado. The generated economic activity is associated with a Colorado level output multiplier of 2.19 for financial injections from federal agricultural conservation easements; for every dollar of federal conservation easement payment in the state, \$2.19 dollars of direct, indirect and induced economic activity is generated in Colorado. This multiplier is larger than we typically expect for

¹³ Yaffe-Bellany, D. and M. Corkery. 2020. Dumped milk, smashed eggs, plowed vegetables: Food waste of the pandemic. New York Times, April 11, 2020. <https://www.nytimes.com/2020/04/11/business/coronavirus-destroying-food.html>

¹⁴ Hardy, K. 2020. ‘Mixture of outrage and resignation.’ Why USDA employees aren’t thrilled with KC move. Kansas City Star. 6/23/2019. <https://ag.purdue.edu/agecon/Pages/FoodandAgVulnerabilityIndex.aspx>

¹⁵ Peel, D.S., Aherin, D., Blach, R., Burdine, K., Close, D., Hagerman, A., Maples, J., Robb, J., and G. Tonsor. 2020. Economic damages to the US beef cattle industry due to COVID-19. Oklahoma Cooperative Extension Service April 2020. <https://extension.okstate.edu/fact-sheets/economic-damages-to-the-u-s-beef-cattle-industry-due-to-covid-19.html>

¹⁶ Economic Research Service <https://www.ers.usda.gov/data-products/county-typology-codes/>

investments in the agriculture sector due to the more \$61 million in easement payments invested the banking sector in the form of savings and debt service. Similar results could be expected in other states to the extent that the expenditure patterns of federal easement payment recipients and the structure of the economy parallel Colorado's, particularly in the agricultural and banking sectors.

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	543	26,230,614	39,445,867	88,856,452
Indirect Effect	378	21,428,953	31,832,626	61,558,283
Induced Effect	311	14,417,473	25,432,960	44,299,325
Total Effect	1,233	62,077,040	96,711,452	194,714,061

This policy brief aims to increase understanding of expenditure patterns and economic impacts stemming from potential future federal agricultural conservation easement program payments to the state of Colorado. Some \$195 million in generated economic activity and more than 1,200 jobs from federal agricultural conservation easement payments is an important contribution to the Colorado economy that all Coloradans can support. If past behavior is a good indication of future plans, anticipated easement payments will provide an important source of farm debt reduction, savings and risk mitigation in these increasingly uncertain times. Results support the conclusion that easement programs disproportionately benefit rural counties where economic opportunity, employment and safety nets are less diverse and less robust. It is likely that these results broadly transfer to other states and rural economies. Activating federal funding to convert pending projects into completed transactions can make this important economic infusion a reality.

5. Acknowledgements

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