

COLORADO'S FARM AND FOOD SYSTEM:



Farm and Agribusiness Contributions
to the Colorado Economy
Bulletin 551A

In cooperation with Colorado Department of Agriculture,
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Contributions to the Colorado
Economy

551A

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Colorado ranks among the leaders in the production of a number of agricultural products. The state ranks number one in the nation in numbers of sheep and lambs on feed and second in the production of onions for storage. It ranks fourth in the production of dry edible beans, cattle on feed, fed cattle marketings, production of sheep, lambs, and wool, fifth in the production of potatoes, sorghum for silage, lettuce, and sixth in the production of wheat and pears. The state ranks in the top twelve states in the production of twenty five different agricultural products. Colorado is the 30th state in terms of numbers of farms but 10th and 9th, respectively, in terms of land in farms and average farm size. Overall, the state occupies a position of some prominence as an agricultural producer on the national scene.

The state's economy is, however, quite diverse and questions continue to be raised regarding the contributions made by agriculture to the Colorado economy. An earlier study (4)¹ of the contributions of agriculture to the Colorado economy was undertaken on the heels of the financial crisis in farming during the early 1980's. The present study follows the same format as the earlier one and maintains the focus on agriculture as a system which begins with provision of agricultural production inputs and services and ends with the distribution of food to the final consumer. The role of the agribusiness sector in the economy receives, however, a greater emphasis in this study.

Agriculture is, unfortunately, often perceived as only the production activities undertaken on farms and ranches in the state. Production agriculture is, in its own right, critical in creating income and employment in many counties. However, it must be recognized that production represents only one step in a highly technical process resulting in a final consumer product. In this process, production agriculture is characterized by both backward and forward linkages with other sectors of the economy. For example, agricultural production generates a demand for inputs not produced or available on the farm. Provision of inputs to meet this demand (for example, feed, seed, gas, oil, fertilizer, pesticides, veterinary services, and farm machinery and equipment) is the first step in the process. In the main, such inputs are provided by what may be termed the **agricultural input sector**.

The second step in the process is the actual production occurring on farms and ranches in what is termed the **farm production sector**. This sector produces goods which are sold directly to consumers and/or which are the basis for further processing and subsequent marketing.

The third step in the process consists of transportation, storage, and processing and includes firms that manufacture food and related products or are involved in the wholesale trade of farm product raw materials. The firms in this sector comprise what is termed the **agricultural processing and marketing sector**.

The final step in the process completes the delivery of food to consumers and involves (a) the wholesale trade of groceries and related products, (b) retail food stores, and (c) eating and drinking establishments. These firms make up the **food wholesaling and retailing sector**.

The agricultural input sector, the farm production sector, and the agricultural processing and marketing sector together make up the **agribusiness sector** of the state's economy. The number and size of firms in the agribusiness sector tend to rise and fall proportionally with farm production and its profitability. Employment, earnings, and in most cases the location of agribusiness firms are directly dependent on Colorado farming and ranching activities.

The **agribusiness sector** combined with the **food wholesaling and retailing sector** forms the **total farm and food system**. This system is the total complex of all Colorado businesses required to support the production and delivery of food to the final consumer.²

This report presents data on the current importance of the farm and food system in Colorado's economy. The primary focus is on the extent to which economies of individual local communities depend on the various agricultural sectors for their economic livelihood. In what follows we look first at the dependence of county economies on production agriculture and then on the dependence of county economies on the agribusiness sector. The key indicators of dependence in both cases are income and employment associated with agricultural production and agribusiness. We conclude with the overall contribution of farms/ranches, agribusiness, and food wholesaling and retailing to employment and income at both county and state levels.

¹ Underlined numbers in parentheses refer to items in References.

² The above sector definitions are similar to those used elsewhere by the U.S. Department of Agriculture (3).

2 Dependency on Production Agriculture

Degree of Dependency on Production

Following the definition of "farm dependency" used by the United States Department of Agriculture, an individual county is classed as "farm dependent" if at least 20 percent of the county's total income comes directly from farming (1 and 3). Income, as used here, refers to the U.S. Department of Commerce concept of labor and proprietor income, rather than the USDA definition of net farm income (see Appendix B for a discussion of the differences). We have used the Commerce concept in order to provide comparability between "farm income" and "nonfarm income."

Colorado had 17 **farm dependent** counties in 1987 – counties with over 20 percent of their labor and proprietor income coming from farming. These counties are located primarily in the Eastern Plains and southern part of the state as shown in

Figure 1 and have economies which are based almost entirely on farming and ranching.

Figure 1 also identifies 11 counties which are **farm important**, that is counties that obtained from 10 to 20 percent of their 1987 labor and proprietor income from farming. These counties have a more diversified economic base than do farm dependent economies but the core economic activity is still agriculture. Some of these counties contain trade centers, servicing the needs of people from surrounding counties. While this trade is obviously not all agricultural, it tends to be based on the needs of the people in agriculture.

In addition to farm dependent and farm important counties, Figure 1 shows 26 nonmetropolitan counties. These counties have economies that are more dependent on mining, retirement populations, or tourism and are located mainly in the mountains and on the western slope. Farming and

ranching are significant in some of these counties but the importance of other economic activity distinguishes them from the farm important counties.

What is Labor and Proprietor Income?

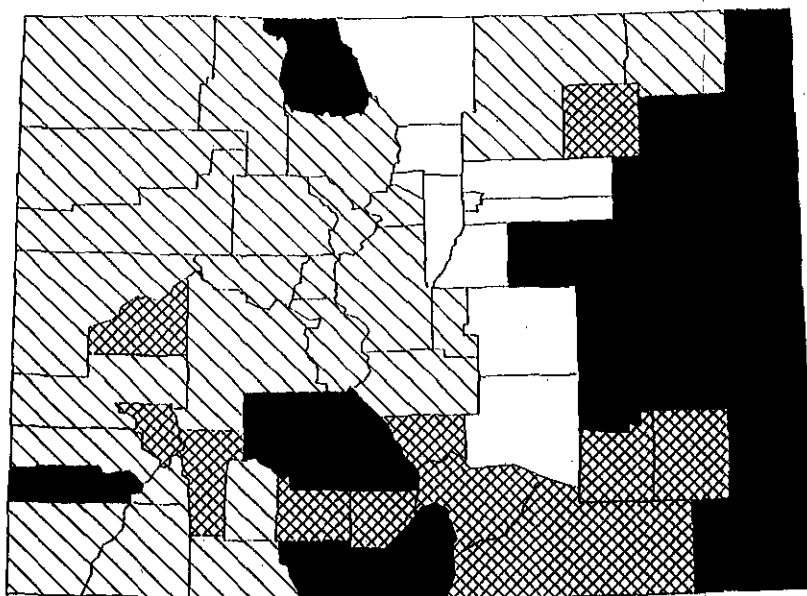
Labor and proprietor income includes the income of wage earners, self-employed persons and business enterprises. It is a measure of the total income generated by economic activity.

Employment is another important measure of economic activity. The number of jobs provided by different industries is an indicator of their contribution to economic output.

Other measures of economic output are also familiar. Gross National Product (or Gross State Product) is commonly used to measure performance of the total economy. Value Added is often used to measure the importance of one industry or sector of the economy. However, labor and proprietor income is the most important component of both Gross National Product and Value Added. Its simplicity and relative ease of measurement at the county level are reasons behind its emphasis in this report.

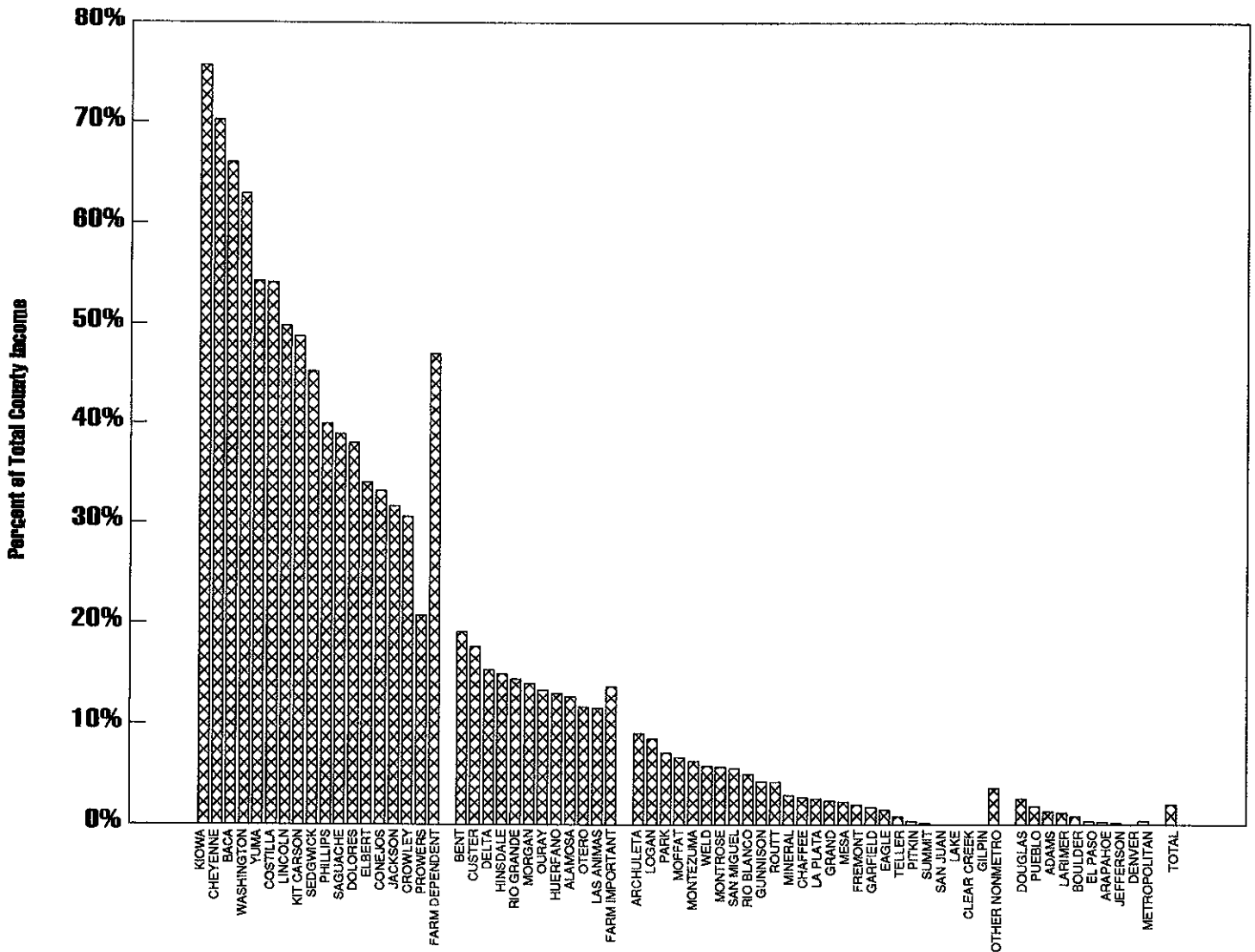
Just as income is a key guide to private sector decisions, it is also an appropriate focus for public policy decisions. Labor and proprietor income accurately measures the contribution of different sectors to the local economy. It also provides an accurate comparison of the economic output of different counties.

Figure 1: Farm dependent and important counties, 1987.



Farm Dependent
 Farm Important
 Other Nonmetro

Figure 2: Farm labor and proprietor income. Percent of total income, Colorado, 1987.



The remaining 10 metropolitan counties or "metropolitan statistical areas" are socially and economically integrated and contain a city of at least 50,000 population. Metropolitan counties lie along the front range from Pueblo County north to Larimer and Weld counties.

Income in Farm Dependent and Farm Important Counties

Table 1 shows the 1987 labor and proprietor income from farming in Colorado counties, along with the

direct government payment made to farmers and ranchers in those counties under government farm programs.³ The counties are grouped in the four categories described above. The order of the counties shown in Table 1 is based on the fifth column, the percent that farm labor and proprietor income contributes to total income in each county.

In the group of 17 **farm dependent** counties, labor and proprietor income from farming provides from 21 percent (Prowers) to 76 percent

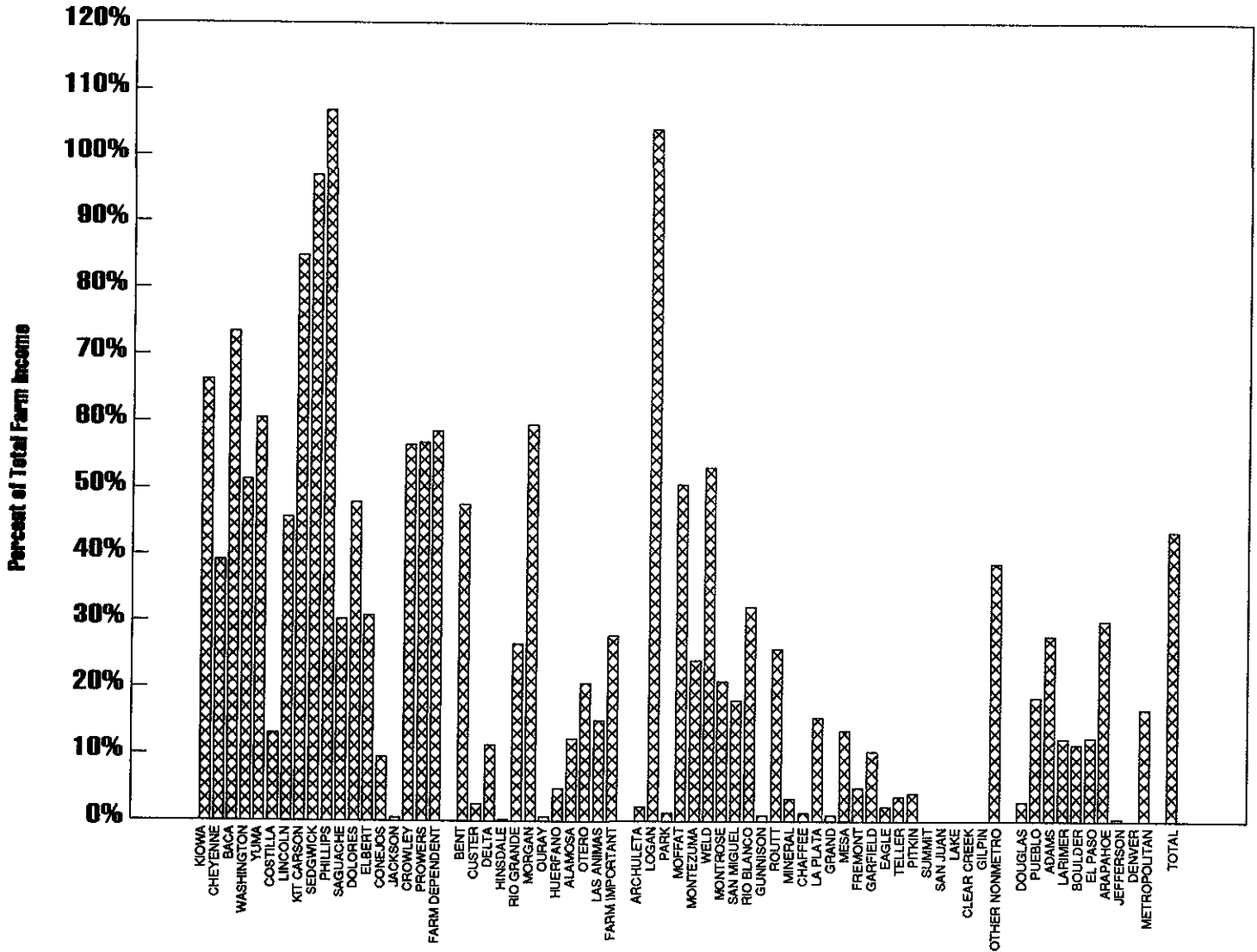
(Kiowa) of total county income (Table 1). For the group of 17 **farm dependent** counties, farm income averages 47 percent of total county income. This contribution declines to 14 percent in the **farm important** counties. Figure 2 illustrates these same percentages for all counties. For the state, farm labor and proprietor income makes

³ Specific sources of data and the methodology used in Table 1 and all other tables of this report are described in detail in Appendix B.

Table 1: Labor and proprietor income from farming, Colorado counties, 1987. (Income in thousands of dollars.)

County	Government Payments	Government Payments % of Farm Income	Other Net Farm Income	Total Farm Income	Farm Percent of Total Income	All Other Sectors	Total Colorado Income
Kiowa	17,284	66.19	8,829	26,113	75.69	8,386	34,499
Cheyenne	12,282	39.20	19,053	31,335	70.21	13,293	44,628
Baca	27,647	73.44	10,000	37,647	66.01	19,386	57,033
Washington	21,592	51.33	20,473	42,065	62.91	24,797	66,862
Yuma	38,191	60.47	24,963	63,154	54.25	53,265	116,419
Costilla	1,265	13.08	8,405	9,670	54.18	8,179	17,849
Lincoln	11,237	45.66	13,375	24,612	49.74	24,865	49,477
Kit Carson	39,935	84.76	7,178	47,113	48.75	49,524	96,637
Sedgwick	12,029	96.96	377	12,406	45.17	15,062	27,468
Phillips	16,580	106.91	(1,072)	15,508	39.93	23,327	38,835
Saguache	2,814	30.29	6,477	9,291	38.86	14,615	23,906
Dolores	2,271	47.92	2,468	4,739	38.01	7,730	12,469
Elbert	4,514	30.77	10,157	14,671	34.05	28,418	43,089
Conejos	1,082	9.61	10,181	11,263	33.20	22,662	33,925
Jackson	26	0.45	5,700	5,726	31.65	12,366	18,092
Crowley	2,556	56.54	1,965	4,521	30.59	10,257	14,778
Prowers	14,778	56.86	11,214	25,992	20.78	99,088	125,080
Farm Dependent	226,083	58.60	159,743	385,826	46.99	435,220	821,046
Bent	3,728	47.66	4,094	7,822	19.14	33,053	40,875
Custer	47	2.53	1,809	1,856	17.68	8,641	10,497
Delta	1,999	11.34	15,623	17,622	15.40	96,781	114,403
Hinsdale	1	0.18	560	561	15.02	3,175	3,736
Rio Grande	3,561	26.59	9,831	13,392	14.49	79,055	92,447
Morgan	14,730	59.61	9,982	24,712	14.06	151,079	175,791
Ouray	12	0.64	1,866	1,878	13.39	12,151	14,029
Huerfano	194	4.83	3,825	4,019	13.08	26,713	30,732
Alamosa	1,604	12.26	11,476	13,080	12.80	89,111	102,191
Otero	3,552	20.69	13,619	17,171	11.74	129,032	146,203
Las Animas	1,265	15.15	7,083	8,348	11.67	63,162	71,510
Farm Important	30,693	27.79	79,768	110,461	13.77	691,953	802,414
Archuleta	67	2.17	3,023	3,090	9.07	30,962	34,052
Logan	14,688	104.08	(576)	14,112	8.57	150,511	164,623
Park	22	1.20	1,812	1,834	7.14	23,867	25,701
Moffat	4,391	50.59	4,288	8,679	6.68	121,167	129,846
Montezuma	1,894	23.96	6,010	7,904	6.37	116,240	124,144
Weld*	33,508	53.14	29,548	63,056	5.89	1,006,820	1,069,876
Montrose	2,253	20.88	8,535	10,788	5.80	175,346	186,134
San Miguel	318	18.01	1,448	1,766	5.66	29,459	31,225
Rio Blanco	1,196	32.19	2,520	3,716	5.10	69,097	72,813
Gunnison	31	0.86	3,572	3,603	4.34	79,417	83,020
Routt	1,788	25.75	5,156	6,944	4.24	156,645	163,589
Mineral	6	3.39	171	177	2.96	5,808	5,985
Chaffee	27	1.18	2,266	2,293	2.75	81,160	83,453
La Plata	1,010	15.51	5,503	6,513	2.60	243,687	250,200
Grand	19	0.95	1,989	2,008	2.37	82,585	84,593
Mesa	2,247	13.57	14,309	16,556	2.29	707,916	724,472
Fremont	181	4.95	3,475	3,656	2.01	178,636	182,292
Garfield	436	10.40	3,755	4,191	1.73	237,951	242,142
Eagle	78	2.09	3,653	3,731	1.48	248,354	252,085
Teller	14	3.62	373	387	0.82	46,890	47,277
Pitkin	36	4.12	837	873	0.35	248,209	249,082
Summit	0	0.00	282	282	0.16	174,209	174,491
San Juan	0	0.00	0	0	0.00	15,752	15,752
Lake	0	0.00	0	0	0.00	46,076	46,076
Clear Creek	0	0.00	0	0	0.00	64,942	64,942
Gilpin	0	0.00	0	0	0.00	7,193	7,193
Other Nonmetro	64,210	38.64	101,949	166,159	3.68	4,348,899	4,515,058
Douglas	197	2.84	6,730	6,927	2.60	259,557	266,484
Pueblo	2,960	18.46	13,071	16,031	1.87	842,376	858,407
Adams	8,130	27.66	21,267	29,397	1.32	2,203,024	2,232,421
Larimer	2,323	12.33	16,523	18,846	1.17	1,592,037	1,610,883
Boulder	2,558	11.39	19,902	22,460	0.81	2,738,970	2,761,430
El Paso	1,578	12.41	11,133	12,711	0.31	4,131,163	4,143,874
Arapahoe	3,240	29.85	7,615	10,855	0.25	4,264,257	4,275,112
Jefferson	19	0.24	7,957	7,976	0.18	4,533,337	4,541,313
Denver	0	0.00	956	956	0.01	11,714,275	11,715,231
Metropolitan	21,005	16.65	105,154	126,159	0.39	32,278,996	32,405,155
Total	341,991	43.37	446,614	788,605	2.05	37,755,068	38,543,673

Figure 3: Importance of government payments to total farm income, Colorado, 1987.



up \$788 million or 2.05 percent of the \$38.5 billion of total income for all sectors of Colorado.

Table 1 also shows that direct payments to farmers and ranchers under government farm programs provide an important part of farm labor and proprietor income (columns 1 and 2). Such payments provided over 58 percent of farm earnings in the farm dependent counties and nearly 28 percent of farm earnings in the farm important counties. Without these payments, Logan and Phillips

Counties would have had negative farm income in 1987. Statewide, \$342 million in government payments made up 43.37 percent of the total \$788.6 million income in production agriculture. Figure 3 shows the relative importance of government payments to total farm earnings for all counties in the state.

Income data for all the sectors making up the Colorado farm and food system are shown in Table 2. In the farm dependent counties total labor and proprietor income was

roughly \$821 million. Of this total, the farm input sector provided \$31.2 million (3.8 percent), production agriculture provided \$385.8 million (46.9 percent of the total), and \$10.9 million (1.3 percent) came from the processing sector. In total, the agribusiness sector generated \$427,928,000 in labor and proprietor income in the farm dependent counties. This is over 52 percent of the total income in these counties. The food wholesale and retail sector adds another \$44.1 million so that the

Table 2: Labor and proprietor income for farm dependent counties, 1987. (Income in thousands of dollars.)

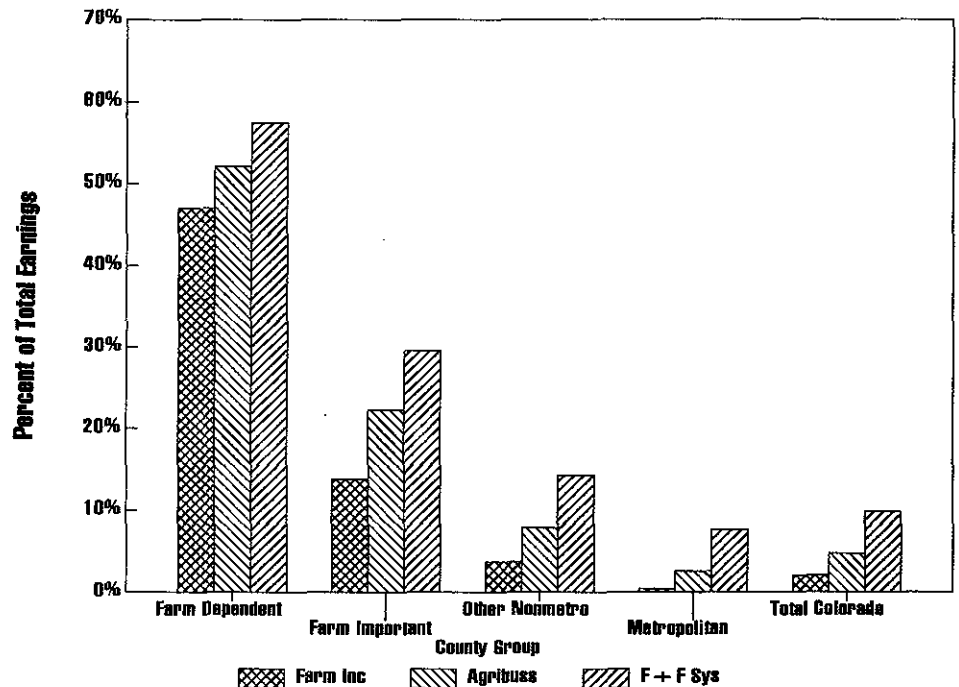
	Agribusiness Sectors				% of Total	Food Wholesaling, Retailing	Total Farm/Food System	Farm/Food System, % of Total	All Other Sectors	Total Colorado Income
	Agricultural Input	Production	Processing, Marketing	Total Agribusiness						
Kiowa	344	26,113	80	26,538	76.92	781	27,319	79.19	7,180	34,499
Cheyenne	614	31,335	111	32,061	71.84	1,129	33,190	74.37	11,438	44,628
Baca	1,198	37,647	174	39,019	68.42	9,782	48,801	85.57	8,232	57,033
Washington	1,294	42,065	2,204	45,563	68.14	2,385	47,947	71.71	18,915	66,862
Yuma	4,423	63,154	2,524	70,101	60.21	3,877	73,978	63.54	42,441	116,419
Costilla	420	9,670	0	10,090	56.53	255	10,345	57.96	7,504	17,849
Lincoln	2,765	24,612	147	27,524	55.63	2,710	30,234	61.11	19,243	49,477
Kit Carson	6,466	47,113	2,016	55,595	57.53	4,089	59,684	61.76	36,953	96,637
Sedgwick	1,731	12,406	108	14,244	51.86	1,494	15,738	57.30	11,730	27,468
Phillips	4,322	15,508	1,814	21,644	55.73	2,652	24,296	62.56	14,539	38,835
Saguache	1,602	9,291	91	10,984	45.95	2,342	13,326	55.74	10,580	23,906
Dolores	779	4,739	17	5,535	44.39	668	6,203	49.75	6,266	12,469
Elbert	737	14,671	84	15,491	35.95	736	16,228	37.66	26,861	43,089
Conejos	166	11,263	92	11,521	33.96	3,116	14,637	43.15	19,288	33,925
Jackson	328	5,726	37	6,091	33.67	558	6,649	36.75	11,443	18,092
Crowley	24	4,521	0	4,545	30.76	527	5,073	34.33	9,705	14,778
Prowers	3,994	25,992	1,393	31,380	25.09	7,039	38,419	30.72	86,661	125,080
Farm Dependent	31,208	385,826	10,894	427,928	52.12	44,140	472,068	57.50	348,978	821,046
Bent	414	7,822	1,089	9,325	22.81	1,018	10,343	25.30	30,532	40,875
Custer	28	1,856	0	1,884	17.95	455	2,339	22.29	8,158	10,497
Delta	7,170	17,622	3,271	28,063	24.53	6,800	34,863	30.47	79,540	114,403
Hinsdale	2	561	0	563	15.07	325	888	23.77	2,848	3,736
Rio Grande	10,136	13,392	2,088	25,616	27.71	7,440	33,056	35.76	59,391	92,447
Morgan	4,231	24,712	21,885	50,827	28.91	18,957	69,784	39.70	106,007	175,791
Ouray	15	1,878	0	1,893	13.50	1,090	2,983	21.27	11,046	14,029
Huerfano	195	4,019	28	4,242	13.80	2,096	6,338	20.62	24,394	30,732
Alamosa	3,200	13,080	835	17,115	16.75	7,131	24,246	23.73	77,945	102,191
Otero	4,327	17,171	8,288	29,786	20.37	7,770	37,556	25.69	108,647	146,203
Las Animas	970	8,348	43	9,360	13.09	5,075	14,435	20.19	57,075	71,510
Farm Important	30,687	110,461	37,527	178,675	22.27	58,156	236,831	29.51	565,583	802,414
Archuleta	327	3,090	27	3,444	10.11	2,450	5,894	17.31	28,158	34,052
Logan	3,337	14,112	11,585	29,033	17.64	10,685	39,719	24.13	124,904	164,623
Park	132	1,834	6	1,972	7.67	1,929	3,901	15.18	21,800	25,701
Moffat	1,377	8,679	571	10,627	8.18	4,535	15,162	11.68	114,684	129,846
Montezuma	3,591	7,904	950	12,444	10.02	6,561	19,005	15.31	105,139	124,144
Weld	24,364	63,056	80,308	167,728	15.68	44,417	212,145	19.83	857,731	1,069,876
Montrose	3,401	10,788	6,427	20,616	11.08	9,734	30,350	16.31	155,784	186,134
San Miguel	184	1,766	9	1,959	6.27	2,938	4,897	15.68	26,328	31,225
Rio Blanco	516	3,716	27	4,259	5.85	2,107	6,366	8.74	66,447	72,813
Gunnison	1,221	3,603	657	5,482	6.60	6,934	12,416	14.96	70,604	83,020
Routt	1,545	6,944	1,365	9,854	6.02	12,391	22,246	13.60	141,343	163,589
Mineral	2	177	0	179	2.99	1,272	1,451	24.24	4,534	5,985
Chaffee	342	2,293	1,519	4,155	4.98	6,410	10,565	12.66	72,888	83,453
La Plata	4,539	6,513	1,998	13,050	5.22	11,230	24,280	9.70	225,920	250,200
Grand	522	2,008	296	2,826	3.34	6,672	9,497	11.23	75,096	84,593
Mesa	8,230	16,556	13,248	38,034	5.25	51,756	89,790	12.39	634,682	724,472
Fremont	857	3,656	657	5,170	2.84	9,069	14,240	7.81	168,052	182,292
Garfield	2,743	4,191	2,287	9,220	3.81	16,914	26,134	10.79	216,008	242,142
Eagle	1,401	3,731	1,986	7,118	2.82	27,340	34,458	13.67	217,627	252,085
Teller	906	387	2	1,294	2.74	3,151	4,445	9.40	42,832	47,277
Pitkin	2,270	873	177	3,320	1.33	21,616	24,936	10.01	224,146	249,082
Summit	1,008	282	6	1,296	0.74	21,161	22,456	12.87	152,035	174,491
San Juan	0	0	0	0	0.00	754	754	4.79	14,998	15,752
Lake	223	0	0	223	0.48	2,794	3,017	6.55	43,059	46,076
Clear Creek	172	0	327	499	0.77	4,797	5,296	8.16	59,646	64,942
Gilpin	0	0	0	0	0.00	902	902	12.54	6,291	7,193
Other Nonmetro	63,209	166,159	124,435	353,802	7.84	290,517	644,320	14.27	3,870,738	4,515,058
Douglas	3,928	6,927	2,041	12,896	4.84	20,176	33,072	12.41	233,412	266,484
Pueblo	4,351	16,031	13,672	34,053	3.97	48,849	82,902	9.66	775,505	858,407
Adams	13,900	29,397	50,574	93,870	4.20	180,848	274,718	12.31	1,957,703	2,232,421
Larimer	14,615	18,846	13,792	47,253	2.93	83,049	130,302	8.09	1,480,581	1,610,883
Boulder	21,803	22,460	30,764	75,027	2.72	124,026	199,053	7.21	2,562,377	2,761,430
El Paso	18,294	12,711	22,783	53,788	1.30	174,368	228,156	5.51	3,915,718	4,143,874
Arapahoe	37,583	10,855	14,647	63,085	1.48	216,720	279,805	6.54	3,995,307	4,275,112
Jefferson	40,864	7,976	176,878	225,718	4.97	212,925	438,642	9.66	4,102,671	4,541,313
Denver	41,688	956	197,341	239,985	2.05	537,608	777,593	6.64	10,937,638	11,715,231
Metropolitan	197,025	126,159	522,492	845,676	2.61	1,598,568	2,444,244	7.54	29,960,911	32,405,155
Total	322,128	788,605	695,347	1,806,081	4.69	1,991,382	3,797,463	9.85	34,746,210	38,543,673

farm and food system accounts for 57.5 percent of labor and proprietor income in the farm dependent counties.

In the farm important counties, the farm and food system in 1987 accounted for \$236.8 million in labor and proprietor income out of a total income of \$802.4 million. This is nearly 30 percent of the total income in these counties. For the individual sectors, the farm input sector contributed \$30.7 million (3.8 percent); the farm production sector contributed \$110.5 million (13.8 percent); the processing sector contributed \$37.5 million (4.7 percent); and the food wholesaling and retailing sector added another \$58.1 million (7.2 percent). The total agribusiness income in the farm important counties was \$178.7 million, or 22.3 percent of the total income.

In the remaining 26 nonmetropolitan counties, the farm and food system is relatively smaller, but is nonetheless an important contributor to economic activity. The entire system provided \$644.3 million in income or 14.2 percent of the total income in this group of counties. Agribusiness alone accounted for 7.84 percent of the \$4.5 billion income in these counties. In the metropolitan areas, the farm and food system contributed labor and proprietor income of \$2.44 billion or 7.54 percent of the total \$32.4 billion. Agribusiness accounted for 2.61 percent or \$845.7 million. Figure 4 provides a graphic representation of these percentages.

Figure 4: Importance of farm and food system. Income and earnings, Colorado, 1987.



Employment in Farm Dependent and Farm Important Counties

While income is an important indicator of the relative economic contributions of particular sectors to a state or local economy, income measures may understate the role of certain sectors with traditionally low incomes or where incomes are temporarily depressed. This was especially true for agriculture during the "farm crisis" of 1980-84. In such cases, employment may provide a truer picture of the actual importance of the sector, or at least a convenient check on the conclusions drawn from income estimates.

Data on the contribution of agriculture to employment in the state in 1987 is presented in Appendix Table A-1. These data show that the farm input sector employed 11 thousand workers, the farm production sector employed 42.4 thousand, the processing sector employed 25.5 thousand, and the food wholesaling and retailing sector 152.7 thousand.

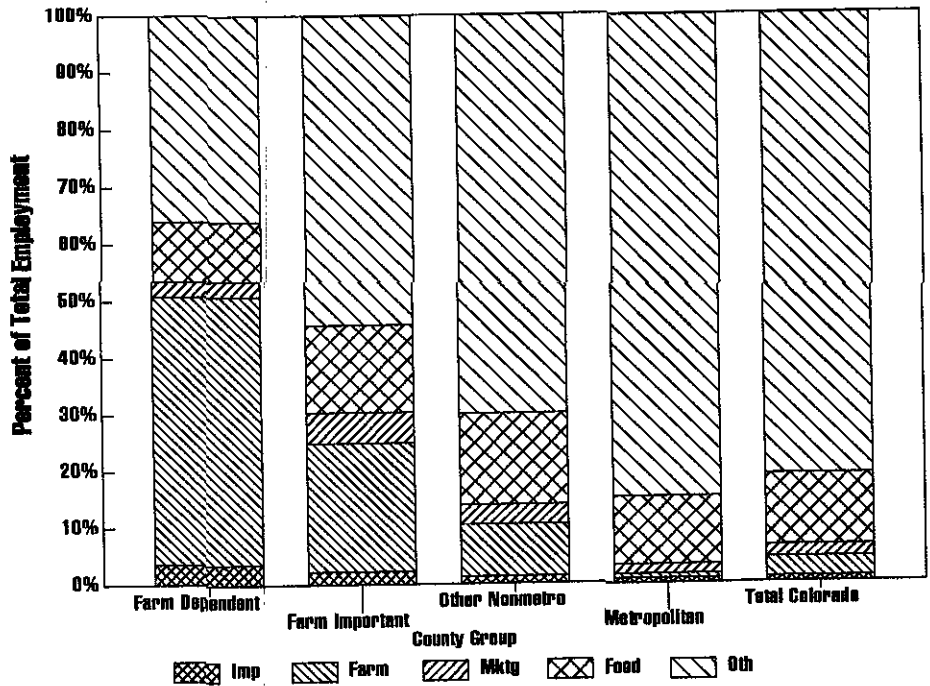
The 79 thousand workers employed in the agribusiness sector made up 6.52 percent of total employment in the state while the employment of 232 thousand in the farm and food system made up over 19 percent of total employment in the state's economy.

The importance of agricultural employment varies significantly with the degree to which the economies of local communities are dependent on farming. Figure 5 shows that farm and ranch employment is dominant in the 17 farm dependent counties, accounting for 47.3 percent of total employment. The agribusiness sector employed about 53.5 percent of the total and the total farm and food system accounted for nearly 64 percent of the total employment in the farm dependent counties. In the farm important counties, agribusiness provided 30.3 percent of the employment and the total farm and food system provided 45.9 percent of total employment.

In the remaining counties in the state, the farm and food system

remains a significant employer, accounting for 17.5 percent of the total employment in the other non-metropolitan and metropolitan counties. The food wholesaling and retailing sectors are more important in these county groupings although agribusiness employs 12.6 percent of all workers.

Figure 5: Distribution of employment by degree of farm dependency, 1987.



Degree of Dependency on Agribusiness

Farm income shown in Table 1 refers only to labor and proprietor income from production on farms and ranches. This farm industry concept is used by the U.S. Department of Agriculture in identifying farm dependent counties (1). However, using only the farm production sector to measure the economic importance of agriculture overlooks the interdependence between production agriculture and other businesses involved in agribusiness. Recognition of some of these sector linkages by identifying **agribusiness dependent** and **agribusiness important** counties provides additional information on the economic contribution of agriculture.

The same general definition may be applied to agribusiness dependent and agribusiness important counties as used before to designate farm dependent and farm important counties. Those counties receiving more than 20 percent of total income from agribusiness activities (farm supply, production agriculture, and agricultural processing) are classified as **agribusiness dependent** counties. Counties receiving between 10 and 20 percent of their total labor and proprietor income from agribusiness are designated as **agribusiness important**.

Figure 6 shows the location of agribusiness dependent and agribusiness important counties in the state. Five counties previously classed as farm important (Morgan, Rio Grande, Delta, Bent, and Otero) join the other 17 farm dependent counties for a total of 22 counties in the agribusiness dependent group. Five counties previously falling under the "other nonmetropolitan" category (Archuleta, Logan, Montezuma, Montrose, and Weld) are now included in the agribusiness important classification. Thus, over 52 percent of the counties in Colorado fall in the categories of agribusiness dependent and agribusiness important.

Table 3 shows the labor and proprietor income data, ordered by the importance of agribusiness income. In the 22 counties classed as agribusiness dependent, the agribusiness sector provided \$571.5 million (41.1 percent) of the total labor and proprietor income of \$1.4 billion. In the 11 counties classified as agribusiness important, agribusiness accounted for \$268.3 million of the total income of \$1.8 billion, or 14.8 percent. Figure 7 provides a graphic representation of the importance of agribusiness labor and proprietor income for each county in Colorado.

In total, the farm and food system accounted for 47.3 percent of the total income in the agribusiness dependent counties and 19.8 percent of the total income in agribusiness important counties in 1987.

Employment in Agribusiness Dependent and Agribusiness Important Counties

Appendix Table A-2 presents the data on employment for the agribusiness dependent, agribusiness important, other nonmetropolitan, and metropolitan counties. In the 22 agribusiness dependent counties, agribusiness employed 20,709 workers or 45 percent of the 22 county total employment of 46,113. Agribusiness employed an additional 20,202 workers in the 11 agribusiness important counties or more than 29 percent of the total 69,416 employed in these counties. In the other nonmetropolitan counties, agribusiness employed 4.84 percent of the total while in the metropolitan counties, this sector employed 32,600 workers or 3.32 percent of the total.

Figure 6: Agribusiness dependent and important counties, 1987.

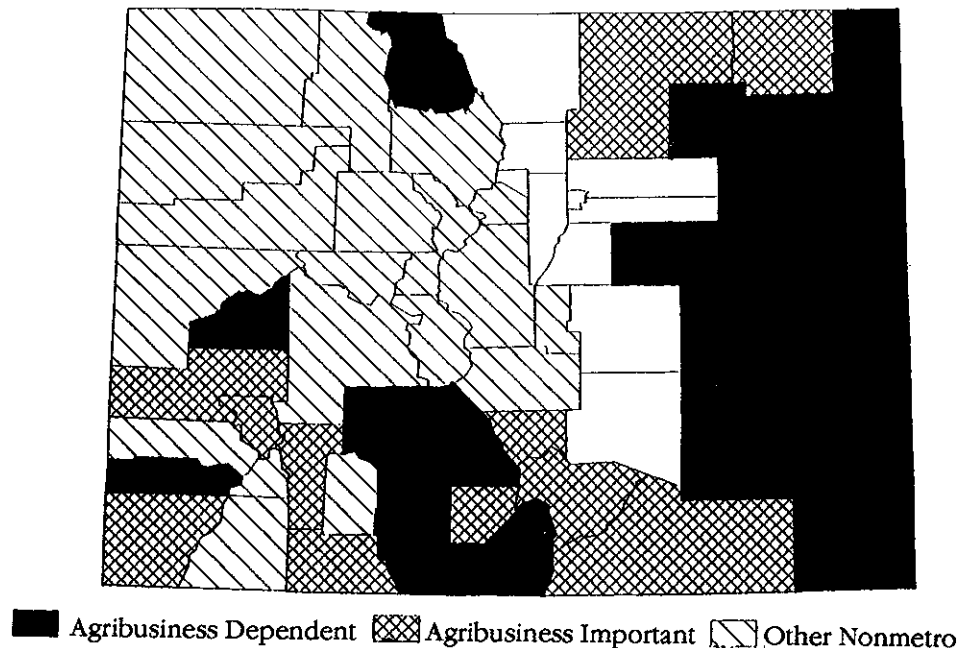
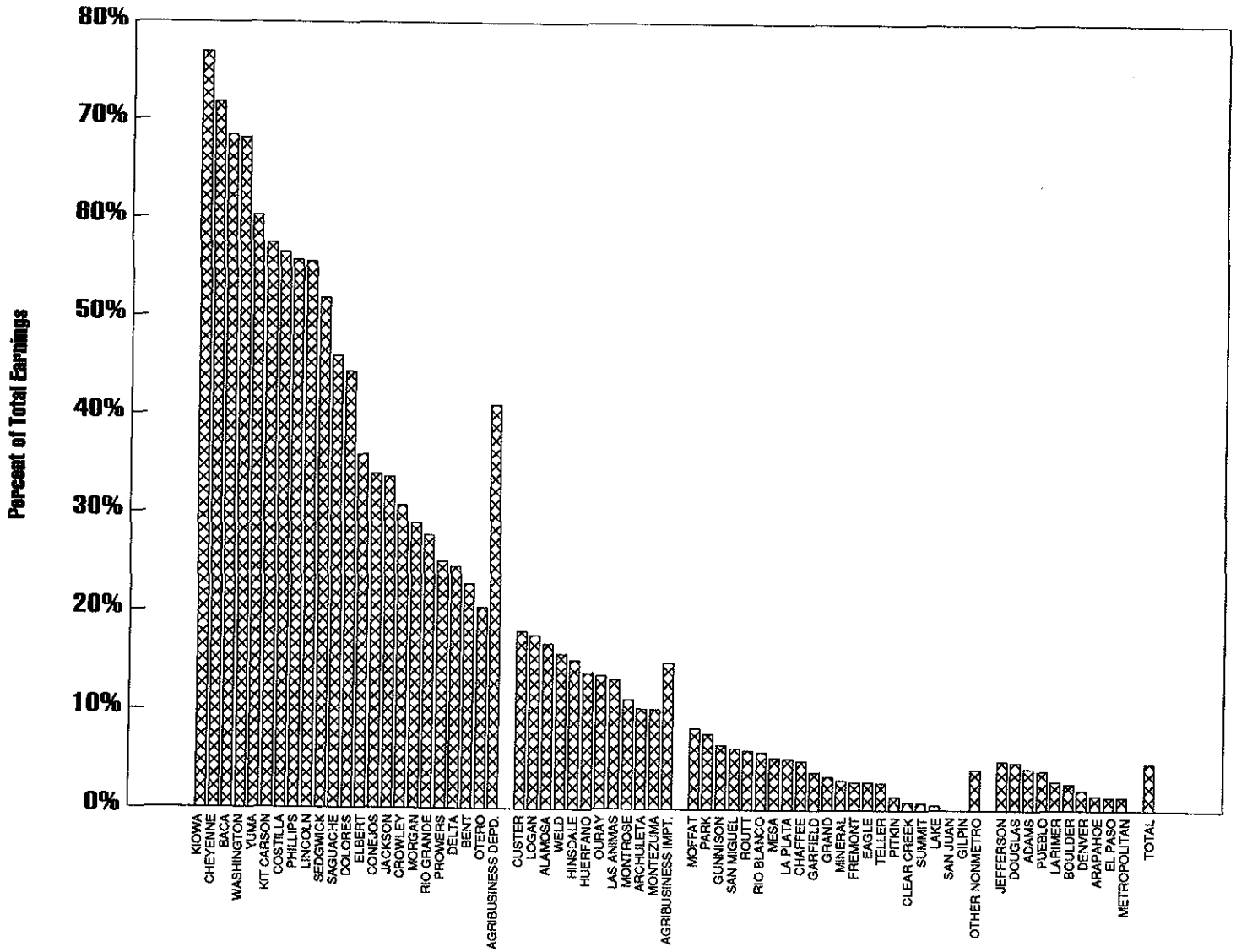


Table 3: Labor and proprietor income for agribusiness dependent counties, 1987. (Income in thousands of dollars.)

	Agribusiness Sectors				% of Total	Food Wholesaling, Retailing	Total Farm/Food System	Farm/Food System, % of Total	All Other Sectors	Total Colorado Income
	Agricultural Input	Production	Processing, Marketing	Total Agribusiness						
Kiowa	344	26,113	80	26,538	76.92	781	27,319	79.19	7,180	34,499
Cheyenne	614	31,335	111	32,061	71.84	1,129	33,190	74.37	11,438	44,628
Baca	1,198	37,647	174	39,019	68.42	9,782	48,801	85.57	8,232	57,033
Washington	1,294	42,065	2,204	45,563	68.14	2,385	47,947	71.71	18,915	66,862
Yuma	4,423	63,154	2,524	70,101	60.21	3,877	73,978	63.54	42,441	116,419
Kit Carson	6,466	47,113	2,016	55,595	57.53	4,089	59,684	61.76	36,953	96,637
Costilla	420	9,670	0	10,090	56.53	255	10,345	57.96	7,504	17,849
Phillips	4,322	15,508	1,814	21,644	55.73	2,652	24,296	62.56	14,539	38,835
Lincoln	2,765	24,612	147	27,524	55.63	2,710	30,234	61.11	19,243	49,477
Sedgwick	1,731	12,406	108	14,244	51.86	1,494	15,738	57.30	11,730	27,468
Saguache	1,602	9,291	91	10,984	45.95	2,342	13,326	55.74	10,580	23,906
Dolores	779	4,739	17	5,535	44.39	668	6,203	49.75	6,266	12,469
Elbert	737	14,671	84	15,491	35.95	736	16,228	37.66	26,861	43,089
Conejos	166	11,263	92	11,521	33.96	3,116	14,637	43.15	19,288	33,925
Jackson	328	5,726	37	6,091	33.67	558	6,649	36.75	11,443	18,092
Crowley	24	4,521	0	4,545	30.76	527	5,073	34.33	9,705	14,778
Morgan	4,231	24,712	21,885	50,827	28.91	18,957	69,784	39.70	106,007	175,791
Rio Grande	10,136	13,392	2,088	25,616	27.71	7,440	33,056	35.76	59,391	92,447
Prowers	3,994	25,992	1,393	31,380	25.09	7,039	38,419	30.72	86,661	125,080
Delta	7,170	17,622	3,271	28,063	24.53	6,800	34,863	30.47	79,540	114,403
Bent	414	7,822	1,089	9,325	22.81	1,018	10,343	25.30	30,532	40,875
Otero	4,327	17,171	8,288	29,786	20.37	7,770	37,556	25.69	108,647	146,203
Agribusiness Depd.	57,484	466,545	47,515	571,544	41.10	86,125	657,669	47.29	733,096	1,390,765
Custer	28	1,856	0	1,884	17.95	455	2,339	22.29	8,158	10,497
Logan	3,337	14,112	11,585	29,033	17.64	10,685	39,719	24.13	124,904	164,623
Alamosa	3,200	13,080	835	17,115	16.75	7,131	24,246	23.73	77,945	102,191
Weld	24,364	63,056	80,308	167,728	15.68	44,417	212,145	19.83	857,731	1,069,876
Hinsdale	2	561	0	563	15.07	325	888	23.77	2,848	3,736
Huerfano	195	4,019	28	4,242	13.80	2,096	6,338	20.62	24,394	30,732
Ouray	15	1,878	0	1,893	13.50	1,090	2,983	21.27	11,046	14,029
Las Animas	970	8,348	43	9,360	13.09	5,075	14,435	20.19	57,075	71,510
Montrose	3,401	10,788	6,427	20,616	11.08	9,734	30,350	16.31	155,784	186,134
Archuleta	327	3,090	27	3,444	10.11	2,450	5,894	17.31	28,158	34,052
Montezuma	3,591	7,904	950	12,444	10.02	6,561	19,005	15.31	105,139	124,144
Agribusiness Impt.	39,429	128,692	100,202	268,324	14.81	90,018	358,342	19.78	1,453,182	1,811,524
Moffat	1,377	8,679	571	10,627	8.18	4,535	15,162	11.68	114,684	129,846
Park	132	1,834	6	1,972	7.67	1,929	3,901	15.18	21,800	25,701
Gunnison	1,221	3,603	657	5,482	6.60	6,934	12,416	14.96	70,604	83,020
San Miguel	184	1,766	9	1,959	6.27	2,938	4,897	15.68	26,328	31,225
Routt	1,545	6,944	1,365	9,854	6.02	12,391	22,246	13.60	141,343	163,589
Rio Blanco	516	3,716	27	4,259	5.85	2,107	6,366	8.74	66,447	72,813
Mesa	8,230	16,556	13,248	38,034	5.25	51,756	89,790	12.39	634,682	724,472
La Plata	4,539	6,513	1,998	13,050	5.22	11,230	24,280	9.70	225,920	250,200
Chaffee	342	2,293	1,519	4,155	4.98	6,410	10,565	12.66	72,888	83,453
Garfield	2,743	4,191	2,287	9,220	3.81	16,914	26,134	10.79	216,008	242,142
Grand	522	2,008	296	2,826	3.34	6,672	9,497	11.23	75,096	84,593
Mineral	2	177	0	179	2.99	1,272	1,451	24.24	4,534	5,985
Fremont	857	3,656	657	5,170	2.84	9,069	14,240	7.81	168,052	182,292
Eagle	1,401	3,731	1,986	7,118	2.82	27,340	34,458	13.67	217,627	252,085
Teller	906	387	2	1,294	2.74	3,151	4,445	9.40	42,832	47,277
Pitkin	2,270	873	177	3,320	1.33	21,616	24,936	10.01	224,146	249,082
Clear Creek	172	0	327	499	0.77	4,797	5,296	8.16	59,646	64,942
Summit	1,008	282	6	1,296	0.74	21,161	22,456	12.87	152,035	174,491
Lake	223	0	0	223	0.48	2,794	3,017	6.55	43,059	46,076
San Juan	0	0	0	0	0.00	754	754	4.79	14,998	15,752
Gilpin	0	0	0	0	0.00	902	902	12.54	6,291	7,193
Other Nonmetro	28,190	67,209	25,138	120,537	4.11	216,671	337,208	11.48	2,599,021	2,936,229
Jefferson	40,864	7,976	176,878	225,718	4.97	212,925	438,642	9.66	4,102,671	4,541,313
Douglas	3,928	6,927	2,041	12,896	4.84	20,176	33,072	12.41	233,412	266,484
Adams	13,900	29,397	50,574	93,870	4.20	180,848	274,718	12.31	1,957,703	2,232,421
Pueblo	4,351	16,031	13,672	34,053	3.97	48,849	82,902	9.66	775,505	858,407
Larimer	14,615	18,846	13,792	47,253	2.93	83,049	130,302	8.09	1,480,581	1,610,883
Boulder	21,803	22,460	30,764	75,027	2.72	124,026	199,053	7.21	2,562,377	2,761,430
Denver	41,688	956	197,341	239,985	2.05	537,608	777,593	6.64	10,937,638	11,715,231
Arapahoe	37,583	10,855	14,647	63,085	1.48	216,720	279,805	6.54	3,995,307	4,275,112
El Paso	18,294	12,711	22,783	53,788	1.30	174,368	228,156	5.51	3,915,718	4,143,874
Metropolitan	197,025	126,159	522,492	845,676	1.30	1,598,568	2,444,244	5.51	29,960,911	32,405,155
Total	322,128	788,605	695,347	1,806,081	4.69	1,991,382	3,797,463	9.85	34,746,210	38,543,673

Figure 7: Agribusiness earnings. Percent of all earnings, Colorado, 1987.



12 Changes in Farm and Food Sector Contributions Over Time

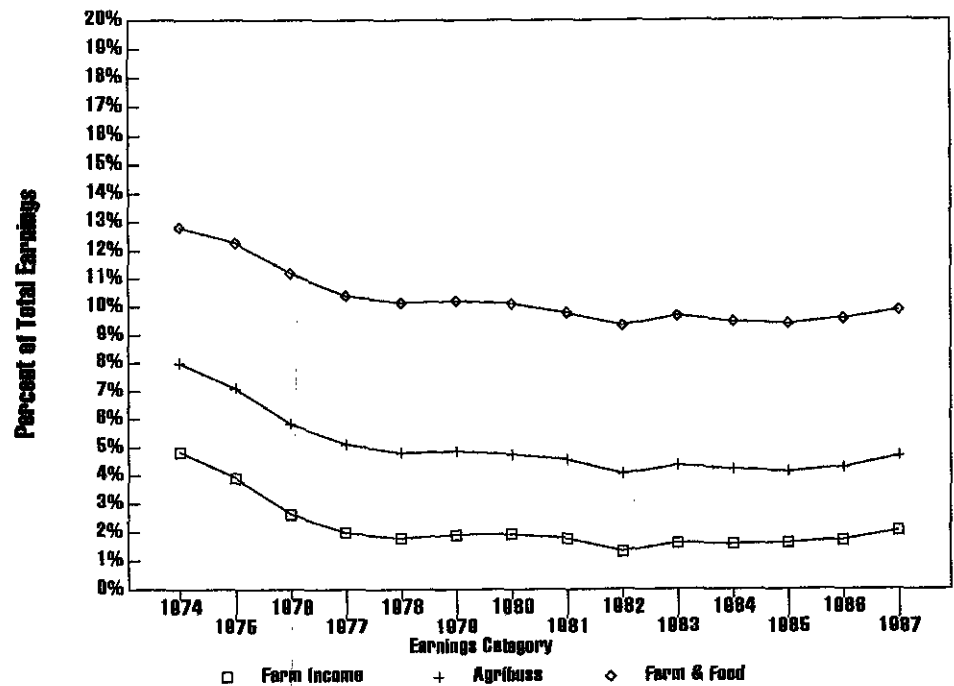
A number of significant trends are taking place in the Colorado farm and food system, as well as in other sectors of the state. Over time, these trends affect both the relative and absolute contributions of agriculture to the state's economy. Changes in Department of Commerce data collection methods, surveys, and definitions make direct comparisons between this report and our earlier work (4) difficult. However, revised 1974-87 data suggest that agriculture remains a vital and important contributor to the state's economic well being. The farm and food system was also a leading contributor to Colorado's economic recovery during the mid-1980s.

Trends in Income

Appendix Table A-3 contains historical detail on income in the farm and food system sectors and for the state in total. U.S. Department of Commerce estimated labor and proprietor income from farming has been quite variable over 1974-87 period and as a percent of the state total has fallen from 4.84 percent to 2.05 percent. However, since 1982 farm earnings have risen steadily from \$388.3 million to \$788.6 million in 1987. As a percent of the state total, farm earnings have increased from a low of 1.31 percent to the 1987 level of 2.05 percent.

In the agribusiness sector income as a percent of the state total was 7.99 percent in 1974 and has fallen to 4.69 percent as of 1987. Here again, agribusiness income was at a low in 1982 (4.07 percent of total state income) but has rebounded from that low. Since 1974, the share of Colorado labor and proprietor income coming from the farm and food system has declined from 12.8 percent to 9.85 percent. However, since 1977, the decline has been a modest 0.53 percent. Figure 8 presents these data in graphic form with income in the agricultural sectors expressed as a percent of total state income.⁴

Figure 8: Importance of farm and food system. Income and earnings, Colorado, 1974-1987.



Trends in Employment

Technological change has increased efficiency and reduced labor requirements in farm production over the past 50 years—these changes are still taking place. From 1973-1987, estimated hired farm employment in Colorado decreased from 64 thousand to 42 thousand (Appendix Table A-4). A second major trend shows employment in agribusiness decreasing from 95 thousand to 79 thousand during this same period. However, population growth and changing consumer demands for more convenient, processed food and for meals away from home has resulted in a rapid growth in employment in the food wholesaling and retailing sector. From 1973 to 1987, employment in the food wholesale and retail sector more than doubled from 76 thousand to 152.7 thousand. These trends have resulted in total farm and food system employment increasing from 171 thousand to 232 thousand during these 14 years.

In percentage terms, growth in farm and food system employment has not quite kept pace with the growth in total Colorado employment (Figure 9). Hired farm labor has declined from 8 percent to 3.5 percent of the state work force and agribusiness employment has declined from 12 percent to 6.5 percent of the total. For the farm and food sector, employment has declined from 22 percent to 19.1 percent of total state employment during the 1973 to 1987 period.

Some of these trends in income and employment are significant, but must be kept in perspective. Significant growth in the state's economy between 1973 and 1985 occurred in the metropolitan counties and in sectors outside the farm and food

⁴ Department of Commerce estimates of labor and proprietor income in agriculture use procedures which are consistent with other sectors in the economy. These estimates differ from USDA and Colorado Agricultural Statistics estimates.

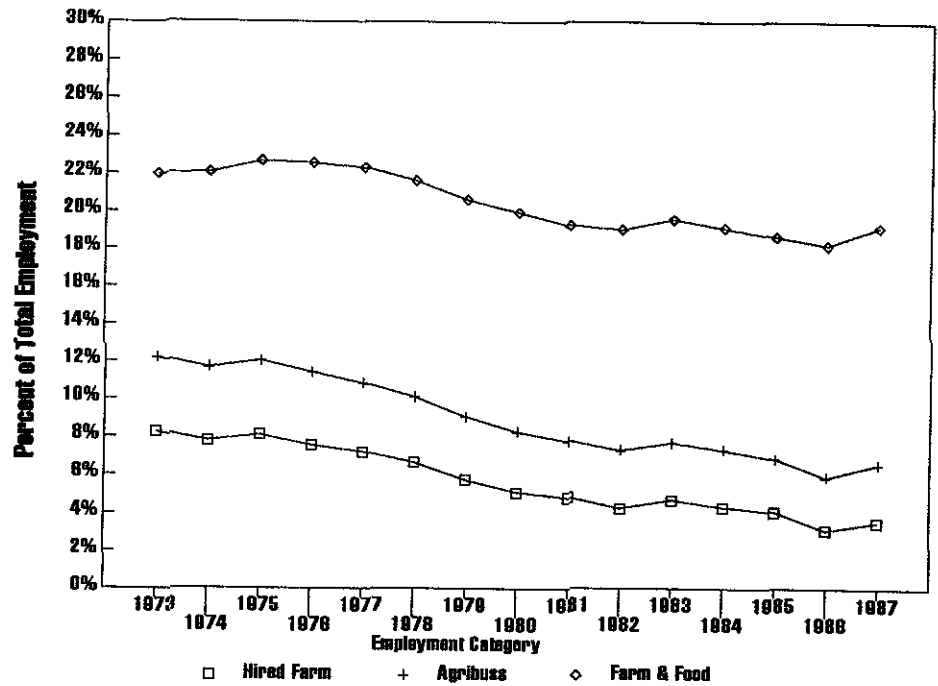
system. During this period, agribusiness employment has declined, and farm and food system income and employment have grown at a slower pace. This growth pattern distorts comparisons of farm and food sector data in two ways. First, it causes an apparent *relative* decline in the contribution of agriculture to the state, even though the farm and food sector continues to grow in absolute terms. Second, substantial growth in the economies of metropolitan counties obscures the fact that agriculture remains the dominant business in the agribusiness dependent and important counties. In this group of counties the agribusiness sector and the total farm and food system are retaining, and more recently increasing, their importance in both absolute and relative terms.

Trends in Population and Per Capita Income

In addition to the employment and income trends, significant changes are occurring in population and per capita income (Appendix Table A-6). The population data show that both the farm dependent and farm important county groups have realized population losses during the period 1984-1987. However, there was significant variation in loss rates from county to county in these two groups. The metropolitan counties continued to gain in population during this period.

Per capita income in the agricultural counties, however, showed significant increases from 1984 to 1987. This was particularly obvious in the farm dependent counties. Many of the farm dependent counties, in fact, were among the leaders in the state in per capita income. The increases in per capita income in these counties indicate that agriculture was an important participant in the economic recovery in the state from 1984 to 1987, just as it was an important part of the earlier economic downturn.

Figure 9: Importance of farm and food system. Employment, Colorado, 1973-1987.



14 Conclusion

Summaries of total Colorado income and employment are presented in Table 4, along with gross sales estimates for the sectors in the farm and food system. In terms of labor and proprietor income, agribusiness sectors provided 4.69 percent of total state income. Total farm and food system income made up 9.85 percent of the state total. These same sectors provided a larger proportion of employment in the state. Here, agribusiness furnished 6.52 percent of the state's employment and the farm and food system provided 19.13 percent, about 1 out of every 5 jobs in Colorado.

The U.S. Department of Agriculture annually estimates total cash receipts (sales) of farms and ranches (9). The third column of Table 2 shows this estimate of \$3.2 billion, along with similar gross sales estimates for the rest of the sectors in the Colorado farm and food system. Agribusiness sales represent about \$11.5 billion, and sales reach \$26.9 billion in the total Colorado farm and food system.⁵

Table 4 does not show a state total estimate of gross sales. The size of important sectors of the Colorado economy (for example Finance, Insurance, and Real estate; and Government) simply cannot be measured in terms of gross sales. This fact makes it impossible to characterize farm and food system gross sales as a percent of total Colorado economic activity.

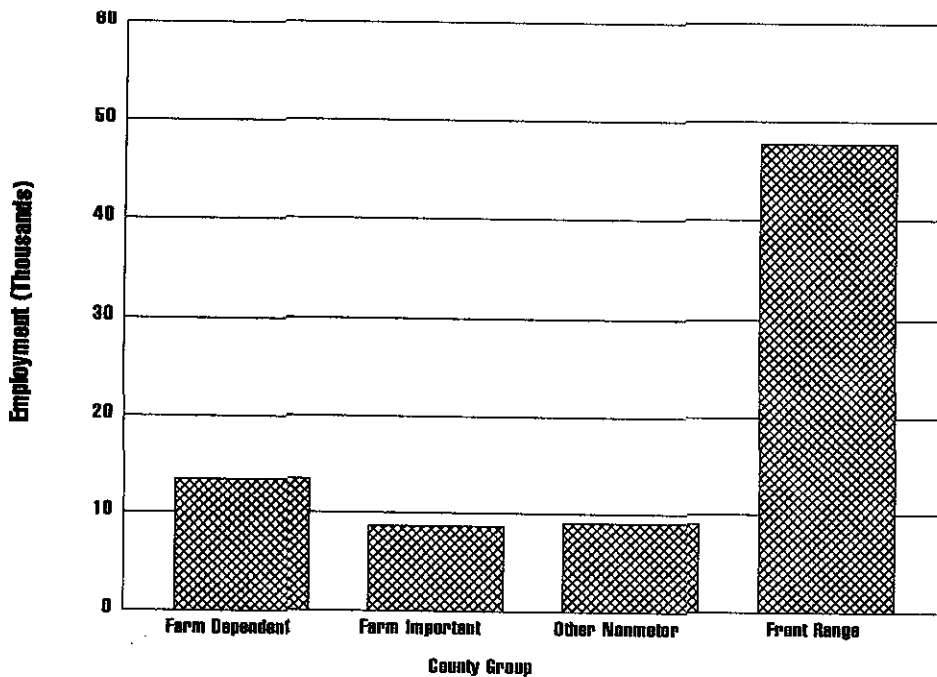
While aggregate data indicate that the farm and food system contributes nearly 9.8 percent of the total state labor and proprietor income, 19.1

Table 4: Summary of farm and food sector contributions to the Colorado economy, 1987.

Sector	Earnings (\$1,000)	Employment	Gross Sales (\$1,000)
Agribusiness Sectors:			
Agricultural Inputs	322,128	11,008	1,646,742
Farm Production	788,605	42,442	3,207,000
Processing and Marketing	695,347	25,481	6,695,448
Total Agribusiness	\$1,806,081	78,930	\$11,549,190
Percent of Total	4.69%	6.52%	NA
Food Wholesaling and Retailing	1,991,382	152,741	15,331,185
Total Farm and Food System	\$3,797,463	231,670	\$26,880,575
Percent of Total	9.85%	19.13%	NA
All Other Sectors	34,746,210	979,428	NA
State Total	\$38,543,673	1,211,099	NA

⁵ Several limitations of these gross sales data are discussed in Appendix B. These data come from several sources, and the data for the different sectors are not all conceptually similar. Sales of a given product are often counted at numerous points in the Farm and Food Sector - as a result the estimates of gross sales contain a considerable amount of double counting.

Figure 10: Agribusiness Employment. Importance by County Group, 1987.



percent of total state employment, and \$26.9 billion in sales, these estimates mask the importance of the sector to specific regional economies in the state. Roughly one-half of the counties in the state are agribusiness dependent or agribusiness important. In these counties agriculture is the critical determinant of economic well-being. The data presented in this report indicate that policies designed to promote stability and further development within agriculture are important to the economic health of these counties.

The division of the state into farm and agribusiness dependent and important counties suggests that the economy is divided. Indeed, parts of the state are highly metropolitan or heavily dependent upon recreation and tourism. Other regions are heavily dependent on agriculture. However, the data also supports the conclusion that agribusiness is an important component of the economic fabric of the Front Range, as well as in the agribusiness dependent and important counties.

In fact, the absolute economic impact of agribusiness is greater in the Front Range than it is in the rest of the state. Table 3 shows that total labor and proprietor income in the Front range (including Weld county) was more than \$1 billion in 1987. Total labor and proprietor income from agribusiness in other counties was only \$793 million. Appendix Table A-2 shows that agribusiness employment was over 48,000 in the Front Range, while total employment in agribusiness in the rest of the state was about 31,300. Figure 10 shows these employment data.

While income and employment in the farm and agribusiness dependent and important counties indicates the reliance of these counties on agribusiness activity, the absolute impact in the rest of the state is also significant and represents a substantial interconnection between agricultural and urban interests.

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- (14) U.S. Department of Commerce, Bureau of Economic Analysis. *Regional Economic Information System (REIS) Data Base*. Distributed through the Economics Department, University of Northern Colorado, Greeley, Colorado. 1989.

Table A-1: Employment in Farm Dependent Counties, 1987.

	Agribusiness Sectors				Food Wholesaling, Retailing	Total Farm/Food System	Farm/Food System, % of Total	All Other Sectors	Total Colorado Employment	
	Agricultural Input	Production	Processing, Marketing	Total Agribusiness						% of Total
Kiowa	21	462	12	495	74.67	28	524	78.93	140	663
Cheyenne	10	413	17	440	55.80	40	480	60.92	308	788
Baca	32	570	27	629	59.23	295	924	87.06	137	1,062
Washington	32	1,107	97	1,235	71.06	142	1,377	79.22	361	1,738
Yuma	95	1,718	126	1,940	60.61	270	2,210	69.05	991	3,201
Costilla	6	514	6	526	70.38	11	537	71.91	210	747
Lincoln	101	700	23	823	53.75	281	1,104	72.07	428	1,532
Kit Carson	123	1,310	112	1,545	57.70	241	1,786	66.69	892	2,678
Sedgwick	44	506	17	567	58.38	57	624	64.23	347	971
Phillips	164	763	57	983	66.45	175	1,158	78.26	322	1,480
Saguache	26	843	14	884	65.79	180	1,064	79.20	279	1,343
Dolores	21	65	3	89	47.98	26	115	62.11	70	185
Elbert	72	313	13	397	25.59	76	474	30.52	1,079	1,553
Conejos	6	515	14	535	50.37	166	700	65.96	361	1,062
Jackson	8	362	6	376	57.69	22	399	61.14	253	652
Crowley	1	465	40	506	75.27	25	531	79.02	141	673
Prowers	110	1,299	99	1,508	30.98	586	2,094	43.02	2,774	4,869
Farm Dependent	871	11,925	682	13,478	53.50	2,622	16,100	63.90	9,094	25,194
Bent	7	422	48	477	56.79	46	523	62.23	318	841
Custer	1	65	2	69	29.20	22	90	38.44	145	235
Delta	55	936	165	1,157	31.47	564	1,721	46.81	1,955	3,676
Hinsdale	0	3	0	4	6.36	11	14	24.30	44	59
Rio Grande	197	930	79	1,206	33.66	642	1,848	51.58	1,734	3,582
Morgan	94	1,707	771	2,572	34.89	1,166	3,737	50.71	3,633	7,370
Ouray	1	95	1	96	18.88	95	191	37.48	318	509
Huerfano	4	105	4	114	12.20	146	259	27.81	674	933
Alamosa	82	743	34	858	21.73	723	1,581	40.02	2,369	3,950
Otero	194	1,183	442	1,819	33.37	610	2,429	44.57	3,021	5,450
Las Animas	18	311	7	335	15.81	455	790	37.26	1,330	2,120
Farm Important	653	6,501	1,553	8,706	30.31	4,477	13,183	45.90	15,541	28,725
Archuleta	5	144	4	153	10.98	243	396	28.40	998	1,393
Logan	175	1,203	589	1,967	31.95	779	2,746	44.61	3,409	6,156
Park	2	57	1	60	12.29	131	191	39.02	298	488
Moffat	30	352	21	403	14.28	409	811	28.77	2,010	2,821
Montezuma	84	204	33	321	7.66	701	1,022	24.42	3,163	4,185
Weid	884	9,951	4,221	15,057	34.50	4,344	19,401	44.45	24,243	43,643
Montrose	131	794	304	1,228	19.71	956	2,184	35.05	4,048	6,232
San Miguel	3	59	1	63	5.58	374	437	38.60	695	1,132
Rio Blanco	10	247	4	261	14.06	219	480	25.82	1,379	1,859
Gunnison	30	210	23	263	6.59	779	1,042	26.08	2,954	3,997
Routt	68	291	46	405	4.94	1,392	1,797	21.92	6,402	8,199
Mineral	0	2	0	2	1.75	37	39	38.19	63	102
Chaffee	13	132	48	193	6.96	460	653	23.51	2,125	2,778
La Plata	87	351	65	503	4.92	2,033	2,536	24.78	7,695	10,231
Grand	9	185	10	204	4.98	709	913	22.30	3,180	4,093
Mesa	269	1,073	394	1,736	7.33	3,121	4,857	20.50	18,834	23,691
Fremont	38	237	22	297	4.79	929	1,226	19.75	4,982	6,208
Garfield	56	360	73	489	5.69	1,614	2,103	24.46	6,495	8,598
Eagle	29	189	62	281	2.23	2,725	3,006	23.89	9,575	12,580
Teller	7	11	0	18	1.13	413	431	27.21	1,152	1,583
Pitkin	62	36	6	104	0.93	2,747	2,851	25.56	8,303	11,154
Summit	75	30	1	106	1.19	2,077	2,183	24.51	6,723	8,906
San Juan	0	0	0	0	0.00	24	24	38.44	38	62
Lake	3	0	0	3	0.27	208	211	19.20	886	1,096
Clear Creek	6	0	10	16	0.77	423	439	21.05	1,647	2,086
Gilpin	0	0	0	0	0.00	27	27	16.41	139	166
Other Nonmetro	2,074	16,120	5,940	24,133	13.91	27,871	52,004	29.98	121,438	173,442
Douglas	300	424	67	791	10.10	1,277	2,068	26.40	5,766	7,835
Pueblo	141	684	656	1,481	5.08	4,522	6,003	20.59	23,151	29,153
Adams	541	2,271	2,025	4,837	5.87	11,171	16,008	19.42	66,414	82,421
Lamar	502	1,396	446	2,344	4.52	7,580	9,924	19.15	41,896	51,820
Boulder	661	1,141	1,655	3,456	3.81	11,708	15,164	16.70	75,661	90,825
El Paso	620	625	543	1,788	1.45	15,031	16,819	13.65	106,432	123,251
Arapahoe	1,209	542	770	2,521	1.72	16,678	19,199	13.08	127,570	146,769
Jefferson	1,763	707	5,013	7,483	5.87	18,082	25,565	20.05	101,956	127,521
Denver	1,672	108	6,132	7,912	2.44	31,721	39,633	12.23	284,510	324,143
Metropolitan	7,410	7,896	17,306	32,612	3.32	117,770	150,383	15.29	833,355	983,738
Total	11,008	42,442	25,481	78,930	6.52	152,741	231,670	19.13	979,428	1,211,099

Table A-2: Employment in agribusiness dependent counties, 1987.

	Agribusiness Sectors				Food Wholesaling, Retailing	Total Farm/Food System	Farm/Food System, % of Total	All Other Sectors	Total Colorado Employment	
	Agricultural Input	Production	Processing, Marketing	Total Agribusiness						% of Total
Klowa	21	462	12	495	74.67	28	524	78.93	140	663
Cheyenne	10	413	17	440	55.80	40	480	60.92	308	788
Baca	32	570	27	629	59.23	295	924	87.06	137	1,062
Washington	32	1,107	97	1,235	71.06	142	1,377	79.22	361	1,738
Yuma	95	1,718	126	1,940	60.61	270	2,210	69.05	991	3,201
Kit Carson	123	1,310	112	1,545	57.70	241	1,786	66.69	892	2,678
Costilla	6	514	6	526	70.38	11	537	71.91	210	747
Phillips	164	763	57	983	66.45	175	1,158	78.26	322	1,480
Lincoln	101	700	23	823	53.75	281	1,104	72.07	428	1,532
Sedgwick	44	506	17	567	58.38	57	624	64.23	347	971
Saguache	26	843	14	884	65.79	180	1,064	79.20	279	1,343
Dolores	21	65	3	89	47.98	26	115	62.11	70	185
Elbert	72	313	13	397	25.59	76	474	30.52	1,079	1,553
Conejos	6	515	14	535	50.37	166	700	65.96	361	1,062
Jackson	8	362	6	376	57.69	22	399	61.14	253	652
Crowley	1	465	40	506	75.27	25	531	79.02	141	673
Morgan	94	1,707	771	2,572	34.89	1,166	3,737	50.71	3,633	7,370
Rio Grande	197	930	79	1,206	33.66	642	1,848	51.58	1,734	3,582
Prowers	110	1,299	99	1,508	30.98	586	2,094	43.02	2,774	4,869
Delta	55	936	165	1,157	31.47	564	1,721	46.81	1,955	3,676
Bent	7	422	48	477	56.79	46	523	62.23	318	841
Otero	194	1,183	442	1,819	33.37	610	2,429	44.57	3,021	5,450
Agribusiness Depd.	1,419	17,104	2,186	20,709	44.91	5,649	26,358	57.16	19,755	46,113
Custer	1	65	2	69	29.20	22	90	38.44	145	235
Logan	175	1,203	589	1,967	31.95	779	2,746	44.61	3,409	6,156
Alamosa	82	743	34	858	21.73	723	1,581	40.02	2,369	3,950
Weld	884	9,951	4,221	15,057	34.50	4,344	19,401	44.45	24,243	43,643
Hinsdale	0	3	0	4	6.36	11	14	24.30	44	59
Huerfano	4	105	4	114	12.20	146	259	27.81	674	933
Ouray	1	95	1	96	18.88	95	191	37.48	318	509
Las Animas	18	311	7	335	15.81	455	790	37.26	1,330	2,120
Montrose	131	794	304	1,228	19.71	956	2,184	35.05	4,048	6,232
Archuleta	5	144	4	153	10.98	243	396	28.40	998	1,393
Montezuma	84	204	33	321	7.66	701	1,022	24.42	3,163	4,185
Agribusiness Impt.	1,383	13,618	5,200	20,202	29.10	8,473	28,675	41.31	40,741	69,416
Moffat	30	352	21	403	14.28	409	811	28.77	2,010	2,821
Park	2	57	1	60	12.29	131	191	39.02	298	488
Gunnison	30	210	23	263	6.59	779	1,042	26.08	2,954	3,997
San Miguel	3	59	1	63	5.58	374	437	38.60	695	1,132
Routt	68	291	46	405	4.94	1,392	1,797	21.92	6,402	8,199
Rio Blanco	10	247	4	261	14.06	219	480	25.82	1,379	1,859
Mesa	269	1,073	394	1,736	7.33	3,121	4,857	20.50	18,834	23,691
La Plata	87	351	65	503	4.92	2,033	2,536	24.78	7,695	10,231
Chaffee	13	132	48	193	6.96	460	653	23.51	2,125	2,778
Garfield	56	360	73	489	5.69	1,614	2,103	24.46	6,495	8,598
Grand	9	185	10	204	4.98	709	913	22.30	3,180	4,093
Mineral	0	2	0	2	1.75	37	39	38.19	63	102
Fremont	38	237	22	297	4.79	929	1,226	19.75	4,982	6,208
Eagle	29	189	62	281	2.23	2,725	3,006	23.89	9,575	12,580
Teller	7	11	0	18	1.13	413	431	27.21	1,152	1,583
Pitkin	62	36	6	104	0.93	2,747	2,851	25.56	8,303	11,154
Clear Creek	6	0	10	16	0.77	423	439	21.05	1,647	2,086
Summit	75	30	1	106	1.19	2,077	2,183	24.51	6,723	8,906
Lake	3	0	0	3	0.27	208	211	19.20	886	1,096
San Juan	0	0	0	0	0.00	24	24	38.44	38	62
Gilpin	0	0	0	0	0.00	27	27	16.41	139	166
Other Nonmetro	796	3,824	788	5,408	4.84	20,848	26,255	23.48	85,577	111,832
Jefferson	1,763	707	5,013	7,483	5.87	18,082	25,565	20.05	101,956	127,521
Douglas	300	424	67	791	10.10	1,277	2,068	26.40	5,766	7,835
Adams	541	2,271	2,025	4,837	5.87	11,171	16,008	19.42	66,414	82,421
Pueblo	141	684	656	1,481	5.08	4,522	6,003	20.59	23,151	29,153
Larimer	502	1,396	446	2,344	4.52	7,580	9,924	19.15	41,896	51,820
Boulder	661	1,141	1,655	3,456	3.81	11,708	15,164	16.70	75,661	90,825
Denver	1,672	108	6,132	7,912	2.44	31,721	39,633	12.23	284,510	324,143
Arapahoe	1,209	542	770	2,521	1.72	16,678	19,199	13.08	127,570	146,769
El Paso	620	625	543	1,788	1.45	15,031	16,819	13.65	106,432	123,251
Metropolitan	7,410	7,896	17,306	32,612	3.32	117,770	150,383	15.29	833,355	983,738
Total	11,008	42,442	25,481	78,930	6.52	152,741	231,670	19.13	979,428	1,211,099

Table A-3: Labor and proprietor income by sector, Colorado, 1974-1987. (Income in thousands of dollars.)

	----- Agribusiness Sectors -----						Food Wholesaling, Retailing	Total Farm/Food System	Farm/Food System, % of Total	All Other Sectors	Total Colorado Income
	Farm Income	% of Total	Agricultural Input	Processing, Marketing	Total Agribusiness	% of Total					
1974	563,559	4.84	92,426	275,043	931,028	7.99	560,961	1,491,989	12.81	10,159,579	11,651,568
1975	492,721	3.91	101,509	299,476	893,706	7.09	652,733	1,546,439	12.26	11,066,160	12,612,599
1976	366,762	2.61	114,837	335,885	817,484	5.83	750,922	1,568,406	11.18	12,462,219	14,030,625
1977	313,578	1.98	133,975	358,634	806,187	5.10	836,310	1,642,497	10.38	14,175,197	15,817,694
1978	328,679	1.78	157,735	400,176	886,590	4.80	982,945	1,869,535	10.12	16,595,271	18,464,806
1979	405,182	1.90	190,705	441,516	1,037,403	4.86	1,141,982	2,179,386	10.20	19,177,350	21,356,736
1980	464,546	1.93	206,348	469,088	1,139,982	4.74	1,290,681	2,430,663	10.10	21,638,729	24,069,392
1981	480,277	1.77	229,533	528,883	1,238,693	4.56	1,414,535	2,653,227	9.77	24,490,903	27,144,130
1982	388,326	1.31	250,146	564,446	1,202,918	4.07	1,560,947	2,763,865	9.35	26,786,728	29,550,593
1983	504,887	1.61	279,887	584,385	1,369,159	4.37	1,665,983	3,035,142	9.68	28,323,556	31,358,698
1984	535,763	1.57	292,686	613,878	1,442,327	4.22	1,793,608	3,235,934	9.47	30,941,883	34,177,817
1985	583,237	1.61	305,115	612,353	1,500,705	4.15	1,900,346	3,401,051	9.40	32,765,711	36,166,762
1986	645,154	1.72	306,948	656,156	1,608,258	4.30	1,976,227	3,584,485	9.57	33,855,643	37,440,128
1987	788,605	2.05	322,128	695,347	1,806,080	4.69	1,991,382	3,797,462	9.85	34,746,211	38,543,673

Table A-4: Employment in the farm and food sector, Colorado, 1973-1987.

	----- Agribusiness Sectors -----						Food Wholesaling, Retailing	Total Farm/Food System	Farm/Food System, % of Total	All Other Sectors	Total Colorado Employment
	Hired Farm Workers	% of Total	Agricultural Input	Processing, Marketing	Total Agribusiness	% of Total					
1973	64,247	8.25	7,664	22,978	94,889	12.18	76,218	171,107	21.97	607,759	778,865
1974	62,856	7.76	7,103	24,394	94,353	11.65	84,074	178,427	22.03	631,447	809,873
1975	63,591	8.08	7,315	23,458	94,364	12.00	83,750	178,114	22.64	608,544	786,657
1976	61,625	7.54	7,657	23,827	93,109	11.39	91,298	184,407	22.55	633,347	817,753
1977	62,283	7.18	7,583	24,142	94,008	10.84	99,343	193,351	22.29	674,175	867,525
1978	65,413	6.63	8,435	25,423	99,271	10.07	113,720	212,991	21.60	773,234	986,224
1979	60,738	5.71	9,409	25,823	95,970	9.02	122,894	218,864	20.58	844,738	1,063,601
1980	55,420	5.06	9,722	25,371	90,513	8.26	127,696	218,209	19.92	877,281	1,095,490
1981	53,568	4.80	10,033	23,007	86,608	7.76	127,893	214,501	19.21	902,040	1,116,541
1982	48,763	4.22	10,788	24,637	84,188	7.28	135,412	219,600	18.99	937,021	1,156,621
1983	52,505	4.64	9,917	24,321	86,743	7.66	134,478	221,221	19.55	910,573	1,131,793
1984	51,569	4.29	10,302	25,879	87,750	7.31	141,573	229,323	19.09	971,758	1,201,081
1985	50,517	4.06	10,695	23,737	84,949	6.82	146,827	231,776	18.61	1,013,988	1,245,763
1986	38,308	3.09	11,333	22,818	72,459	5.85	152,616	225,075	18.16	1,014,429	1,239,503
1987	42,442	3.50	11,008	25,481	78,931	6.52	152,741	231,672	19.13	979,427	1,211,099

Table A-5: Population and per capita income, Colorado counties, 1987.

County	Population				Per Capita Personal Income			
	1980	1984	1980-84 % Change	1987	1984-87 % Change	1984 (\$)	1987 (\$)	1984-87 % Change
Kiowa	1,936	1,989	2.74	1,820	-8.50	21,418	23,437	9.43
Cheyenne	2,153	2,373	10.22	2,329	-1.85	16,214	25,686	58.42
Baca	5,419	5,001	-7.71	4,489	-10.24	12,789	16,950	32.54
Washington	5,304	5,498	3.66	5,141	-6.49	14,703	18,295	24.43
Yuma	9,682	10,025	3.54	9,596	-4.28	12,537	17,048	35.98
Costilla	3,071	3,291	7.16	3,398	3.25	10,375	10,095	-2.70
Lincoln	4,663	4,512	-3.24	4,530	0.40	14,313	16,062	12.22
Kit Carson	7,599	8,018	5.51	7,586	-5.39	13,453	18,229	35.50
Sedgwick	3,266	3,306	1.22	2,968	-10.22	13,197	16,833	27.55
Phillips	4,542	4,519	-0.51	4,571	1.15	12,320	15,984	29.74
Saguache	3,935	4,014	2.01	4,137	3.06	9,356	10,081	7.75
Dolores	1,658	1,711	3.20	1,532	-10.46	12,003	13,326	11.02
Elbert	6,850	8,211	19.87	9,259	12.76	13,672	15,942	16.60
Conejos	7,794	8,180	4.95	8,421	2.95	6,506	7,631	17.29
Jackson	1,863	1,722	-7.57	1,651	-4.12	10,939	15,282	39.70
Crowley	2,988	3,092	3.48	3,457	11.80	8,293	10,417	25.61
Prowers	13,070	14,121	8.04	13,700	-2.98	11,169	12,629	13.07
Farm Dependent	85,793	89,583	4.42	88,585	-1.11	12,092	14,820	25.61
Bent	5,945	5,875	-1.18	5,499	-6.40	8,859	11,262	27.12
Custer	1,528	1,946	27.36	2,142	10.07	10,793	13,276	23.01
Delta	21,225	24,457	15.23	22,511	-7.96	9,816	10,868	10.72
Hinsdale	408	519	27.21	424	-18.30	12,796	14,254	11.39
Rio Grande	10,511	11,306	7.56	11,656	3.10	10,981	11,625	5.86
Morgan	22,513	23,162	2.88	22,261	-3.89	10,594	11,905	12.37
Ouray	1,925	2,104	9.30	1,989	-5.47	11,758	14,581	24.01
Huerfano	6,440	6,983	8.43	7,110	1.82	8,748	9,990	14.20
Alamosa	11,799	12,514	6.06	12,730	1.73	10,243	11,063	8.01
Otero	22,567	22,188	-1.68	21,565	-2.81	10,187	11,583	13.70
Las Animas	14,897	14,761	-0.91	14,498	-1.78	8,825	10,499	18.97
Farm Important	119,758	125,815	5.06	122,385	-2.73	10,011	11,312	8.01
Archuleta	3,664	4,998	36.41	5,304	6.12	9,060	10,954	20.91
Logan	19,800	20,000	1.01	18,758	-6.21	11,583	13,333	15.11
Park	5,333	6,297	18.08	6,194	-1.64	11,377	12,605	10.79
Moffat	13,133	13,819	5.22	11,093	-19.73	9,393	12,849	36.79
Montezuma	16,510	18,777	13.73	16,636	-11.40	10,441	11,146	6.75
Weld*	123,438	133,904	8.48	140,044	4.59	11,183	12,397	10.86
Montrose	24,352	25,919	6.43	25,499	-1.62	9,715	11,859	22.07
San Miguel	3,192	3,208	0.50	3,974	23.88	9,598	13,235	37.89
Rio Blanco	6,255	6,446	3.05	5,693	-11.68	14,028	13,530	-3.55
Gunnison	10,689	11,040	3.28	12,026	8.93	9,863	11,611	17.72
Routt	13,404	14,632	9.16	14,536	-0.66	15,403	16,206	5.21
Mineral	804	839	4.35	699	-16.69	12,125	10,430	-13.98
Chaffee	13,227	12,773	-3.43	12,364	-3.20	11,301	12,683	12.23
La Plata	27,195	30,638	12.66	30,234	-1.32	11,206	12,829	14.48
Grand	7,475	9,243	23.65	9,539	3.20	13,176	14,481	9.90
Mesa	81,530	93,985	15.28	86,498	-7.97	11,047	12,571	13.80
Fremont	28,676	30,434	6.13	29,994	-1.45	10,084	11,461	13.66
Garfield	22,514	25,196	11.91	25,655	1.82	12,683	13,129	3.52
Eagle	13,320	16,952	27.27	19,385	14.35	16,904	18,656	10.36
Teller	8,034	10,331	28.59	11,468	11.01	11,788	12,738	8.06
Pitkin	10,338	11,398	10.25	13,307	16.75	23,103	27,078	17.21
Summit	8,848	12,635	42.80	13,541	7.17	17,043	19,507	14.46
San Juan	833	940	12.85	848	-9.79	11,517	15,501	34.59
Lake	8,830	7,325	-17.04	6,292	-14.10	9,474	9,169	-3.22
Clear Creek	7,308	7,581	3.74	7,552	-0.38	13,945	15,059	7.99
Gilpin	2,441	2,755	12.86	2,833	2.83	12,208	13,195	8.08
Other Nonmetro	481,143	532,065	10.58	529,966	-0.39	11,784	13,340	13.20
Douglas	25,153	33,883	34.71	43,562	28.57	18,528	20,383	10.01
Pueblo	125,972	126,525	0.44	130,357	3.03	10,302	11,444	11.09
Adams	245,944	265,928	8.13	270,029	1.54	12,125	13,052	7.65
Larimer	149,184	166,208	11.41	177,903	7.04	12,364	13,890	12.34
Boulder	189,625	211,272	11.42	216,395	2.42	15,638	17,455	11.62
El Paso	309,424	355,064	14.75	393,939	10.95	12,992	14,615	12.49
Arapahoe	293,292	365,828	24.73	386,679	5.70	17,010	18,126	6.56
Jefferson	371,753	408,673	9.93	421,993	3.26	16,536	18,084	9.36
Denver	492,694	508,511	3.21	511,372	0.56	16,275	17,815	9.46
Metropolitan	2,203,041	2,441,892	10.84	2,552,229	4.52	14,900	16,323	9.55
Total	2,889,735	3,189,355	10.37	3,293,165	3.25	14,108	15,616	10.69

Table 1. Labor and Proprietor Income from Farming, Colorado Counties, 1987

The data in this table is from the U.S. Department of Commerce *Regional Economic Information System (REIS)* (14). Note that the U.S. Department of Commerce (DOC) "Farm Labor and Proprietors' Income" used here differs from USDA net farm income. DOC estimates labor and proprietor income from farming, sometimes referred to as "earned income," by adjusting USDA depreciation estimates to a straight line method (consistent with DOC estimates of depreciation in other industries), subtracting the income of corporate farms, and adding all farm wages and salaries including cash and pay-in-kind of farm labor and salaries of officers of corporate farms. Because of the inclusion of farm wages, estimated labor and proprietor income from farming is larger and more stable year to year than USDA net farm income. This DOC definition of farm income is used throughout this report to be comparable with nonfarm sectors.

The order and grouping of counties in Table 1 is according to the importance of farm earnings to total county income. Counties with over 20 percent of their income from farming are designated "farm dependent." This designation is consistent with the methodology developed by the U.S. Department of Agriculture (1 and 3); counties with at least 20 percent of their income from a specific industry have been found to be economically "dependent" on that industry. Counties in the 10 to 20 percent range are designated "farm important" in this report.

Table 2. Labor and Proprietor Income by Sector, Colorado Counties, 1987

Basic data for the Appendix A tables on income and employment are from U.S. Department of Commerce *Regional Economic Information System (REIS)* (14) and *County Business Patterns, 1987, Colorado* (13). Agricultural related sectors were compiled using the 1982 Standard Industrial Classification (SIC) Code industries, as described below.

Because of limitations on the disclosure of individual establishments, Department of Commerce reports do not show county level data for industries with one or two establishments or with less than 20 employees (less than 100 or less than 250 in some cases); however these suppressed data are included in state totals and the totals for all counties suppressed can be determined by subtracting the total of counties shown from the state total. This report *estimates* income and employment in suppressed counties by allocating the total for all suppressed counties back to individual counties based on the relative size of larger and similar sector categories where county data is shown. Except for the farm production sector, most individual county sector data of less than 100 employees and earnings of less than \$1 million are estimates unique to this report, and not official Department of Commerce numbers. *Such estimates do not represent the actual employment and payroll for individual establishments in these counties.*

Specific SIC industry codes included in each sector shown in Table 2 are as follows:

Agricultural Input Sector. Estimated as the total labor and proprietor income of industries in SIC codes 07-08-09 (Agricultural services, forestry, fisheries); SIC 287 (Manufacturing agricultural chemicals); SIC 352 (Manufacturing farm and garden machinery); SIC 5083 (Wholesale farm machinery and equipment); SIC 497 (Irrigation systems); SIC 5083 (Wholesale farm machinery); SIC 5191

(Wholesale farm supplies); SIC 613 (Agricultural credit institutions); and SIC 622 (Commodity contracts brokers, dealers).

Production Sector. County farm production sector earnings for 1987 are from (14).

Processing and Marketing Sector. Earnings in industries SIC 20 (Manufacturing of food and kindred products); SIC 3551 (Manufacturing food products machinery); and SIC 515 (Wholesale raw farm products).

Food Wholesaling and Retailing Sectors. Earnings for SIC 54 (Wholesale groceries and related products); SIC 54 (Food stores); and SIC 58 (Eating and drinking places).

Total Colorado Income. Total earnings by industry from the U.S. Department of Commerce (14).

It should be noted that the definition of the Colorado farm and food system used in this report is narrower than the definition of the U.S. Food and Fiber System described by the U.S. Department of Agriculture (1, 2) and (3). USDA attempts to include all industries that contribute to the total economic activity required to support the delivery of food, clothing and shoes and tobacco to domestic consumers and to support agricultural exports. Included are a number of SIC codes in what USDA designates as "primary industries" (used all of their work force in the production necessary to satisfy the U.S. final demands for food and fiber) and "secondary industries" (used between 50 and 100 percent of their work force in production necessary to satisfy the U.S. final demands for food and fiber) (2, p.36) The Colorado estimates in this report exclude many of these industries because (a) so few are employed in most counties that disclosure restrictions limit county data, or (b) they appear unrelated to Colorado agricultural production (for example, tobacco, apparel and printing).

By sector, specific SIC codes included in the USDA definition but excluded in Colorado are:

(a) Input sector, primary industries – SIC 147 (Chemical and fertilizer mining).

(b) Input sector, secondary industries – SIC 178 (Water well drilling), SIC 3444-3448 (Prefabricated metal work and buildings), SIC 3561 (Pumps and pumping equipment) and SIC 7692/9 (Miscellaneous repair shops).

(c) Processing sector, primary industries – SIC 21 (Tobacco), SIC 221-223-224-225-2261-2269-228-2292-2298-2299-231/8-2397 (Apparel and textiles), SIC 31 (Leather manufacturing) and SIC 4221-4222 (Warehousing).

(d) Processing sector, secondary industries – SIC 2393-2395 (Manufacturing of miscellaneous textile products), SIC 262-263-2641-2643-2651/5-3221 (Paper products and containers), SIC 3315/7-334-3411 (Primary fabricated metal products), and SIC 3993 (Signs and advertising displays).

(e) Food wholesaling and retailing sectors, primary industries – SIC 56 (Apparel and accessory stores), SIC 513 (Wholesale apparel); SIC 518 (Wholesale beer, wine and distilled beverages) and SIC 5194 (Tobacco wholesale).

(f) Food wholesaling and retailing sector, secondary industries – SIC 271/2-274-2751/2-2754-2793/5 (Printing and publishing).

Table A-1. Employment in Farm Dependent Counties, 1987

The basic source for sector employment data is the U.S. Department of Commerce *County Business Patterns, 1987, Colorado* (13). Sectors were defined by the same SIC codes used in Table 2.

County Business Patterns does not show farm employment. Total farm employment is estimated from Colorado Department of Labor and Employment data (5). This total was allocated to counties on the basis of 1987 Census of Agriculture (10) "equivalent workers" and REIS (14) "hired farm labor expense" estimates.

Total Colorado employment is total (non-farm) employees from (13) plus estimated 1987 farm employment from (5).

Table 3. Labor and Proprietor Income for Agribusiness Dependent Counties, 1987

Data and Sector definitions in this table are identical to those used in Table 2. However, the order and grouping of counties in this table is according to the percent of total county income generated by the Agribusiness Sectors. Counties with over 20 percent of their income from agribusiness are designated "agribusiness dependent" and counties in the 10 to 20 percent range are designated "agribusiness important" in this report.

Table A-2. Employment in Agribusiness Dependent Counties, 1987

Data and Sector definitions in this table are identical to those used in Table A-1. Again, the order and grouping of counties in this table is according to the importance of Agribusiness Sector income.

Table A-3. Labor and Proprietor Income by Sector, Colorado, 1974-87

Table uses same methodology and SIC codes and is from same sources (13 – Annual issues; and 14) as Table 2.

Table A-4. Employment in the Farm and Food Sector, Colorado, 1973-87

Basic sources for sector employment data is the U.S. Department of Commerce *County Business Patterns, Annual Issues, Colorado* (14). Sectors were defined by the same SIC codes used in Table 2.

For 1973-1985, farm employment equals hired farm workers in Census years from (10), interpolated as necessary. As discussed in the 1979 Census of Agriculture, the data contains a significant double counting of part-time workers who have more than one job during the year. For 1986 and 1987, total farm employment is estimated from Colorado Department of Labor and Employment data (5).

Table A-5. Population and Per Capita Income of Colorado Counties, 1987.

Population data is from the Colorado Division of Local Government (7). Per capita income data is from the U.S. Department of Commerce (14). Average per capita income estimates for groups of counties are weighted by population.

Table 4. Summary of Farm and Food Sector Contributions to the Colorado Economy, 1987.

The first two columns of this table summarize the income and employment data from the appendix tables of this report as described above. The third column presents gross sales estimates for the Farm and Food Sector, as follows:

Agricultural Input Sector. The total of SIC 07-08-09 earnings in 1987 from (14); SIC 287 and SIC 352 sales in 1982 from (11); SIC 5083 sales and SIC 5191 sales from (12); SIC 497, SIC 613, and SIC 622 sales are from the Colorado Department of Revenue (6).

Production Sector. State total cash receipts from crop and livestock marketing in 1987 are from the U.S. Department of Agriculture (9). Sales of intermediate crop and livestock products to other farmers are included here rather than in farm input sector sales.

Processing and Marketing Sector. The basic Colorado total of sales for SIC 20 (Manufacturing of food and kindred products) and SIC 3551 (Manufacturing food products machinery) is from the DOC 1982

Census of Manufacturing (11). Comparable 1987 data at the state level is not yet available. The sector also includes SIC 515 (Wholesale raw farm products) from (12).

Food Wholesaling and Retailing Sectors. Wholesale food sales data for SIC 514 (Wholesale groceries and related products) from (12). Retail sales include Food Stores and Eating & Drinking categories from (6).

The only conceptually clear, comparable, and additive sales data available for different sectors are *retail sales* estimates from the University of Colorado (8) and the Colorado Department of Revenue (6). Retail sales data is not emphasized here because the Agribusiness sectors generate relatively few retail sales. Instead Gross sales estimates are shown in Table 4. These data come from several sources, and the data for the different sectors are not all conceptually similar. For example, earnings data have been used for SIC codes 07-08-09 and 1982 value of shipments data have been used for SIC 20, SIC 287, SIC 352, and SIC 3551 industries.

Also note that the estimates are for gross sales, and not value added. Sales of a given product are often counted at numerous points in the Farm and Food Sector – as a result the estimates of gross sales contain a considerable amount of double counting.

Finally, Table 4 does not show state total estimate of gross sales. Important industry sectors of the Colorado economy (for example Construction; Finance, Insurance, and Real estate; and Government,) simply do not generate comparable gross sales; thus no data is available for these sectors. This fact makes it impossible to characterize Agribusiness Sector or the Total Farm and Food System gross sales as a percent of total Colorado economic activity.

Farm and Food Contributions to the Colorado Economy (1987): Executive Summary



February 1991

Farm and Food System. The farm and food system is an important component of Colorado's economy. The system, which includes all activities necessary to deliver food to consumers, contributed \$3.8 billion to total state labor and proprietor income in 1987. Further, the system provided 231,000 jobs and accounted for sales of \$26.9 billion. Income of the system is 9.8 percent of the state total; employment within the system is 19.1 percent of the state total.

Agribusiness. Within the farm and food system agribusiness – agricultural supply, production, and processing – produced \$1.8 billion, or 4.7 percent of total state income in 1987. With 79,000 jobs, the sector furnished 6.5 percent of all employment in the state. The agribusiness sector accounted for \$11.5 billion in gross sales in 1987.

On-Farm Production. In 1987, Colorado's farms and ranches alone (the farm production sector) generated \$789 million in income, provided 42,000 jobs, and generated gross sales of \$3.2 billion.

Farm and Food Sector Contributions to the Colorado Economy, 1987

	Earnings (\$ Mil.)	Employment (Thous.)	Gross Sales (\$ Mil.)
Agribusiness Sectors:			
Agricultural Inputs	322	1	1,647
Farm Production	789	42	3,207
Processing and Marketing	695	25	6,695
Total Agribusiness	\$1,806	79	\$11,549
Percent of State Total	4.7%	6.5%	NA
Food Wholesaling and Retailing	1,991	153	15,331
Total Farm and Food System	\$3,797	232	\$26,881
Percent of State Total	9.8%	19.1%	NA

(----- FARM AND FOOD SYSTEM -----)

(----- AGRIBUSINESS -----)



Measures of Economic Importance

Labor and proprietor income includes the income of wage earners, self-employed persons and business enterprises. It measures the total income generated by economic activity. Its simplicity and relative ease of measurement at the county level are reasons behind its emphasis in this report.

Employment is another important measure of economic activity. The number of jobs provided by different industries is an indicator of their contribution to economic output.

Gross sales is used frequently to measure economic output, particularly for farm production. However, double counting as each product moves through the farm and food system limits its validity and comparability with other industries.

1658 County Income and Employment in Colorado's Farm and Food System, 1987

County	Labor and Proprietor Income (\$1,000)				Employment			
	Farm Production	Agri-business	Farm and Food	Total ¹	Farm Production	Agri-business	Farm and Food	Total ¹
Adams	29,397	93,870	274,718	2,232,421	2,271	4,837	16,008	82,421
Alamosa	13,080	17,115	24,246	102,191	743	858	1,581	3,950
Arapahoe	10,855	63,085	279,805	4,275,112	542	2,521	19,199	146,769
Archuleta	3,090	3,444	5,894	34,052	144	153	396	1,393
Baca	37,647	39,019	48,801	57,033	570	629	924	1,062
Bent	7,822	9,325	10,343	40,875	422	477	523	841
Boulder	22,460	75,027	199,053	2,761,430	1,141	3,456	15,164	90,825
Chaffee	2,293	4,155	10,565	83,453	132	193	653	2,778
Cheyenne	31,335	32,061	33,190	44,628	413	440	480	788
Clear Creek	0	499	5,296	64,942	0	16	439	2,086
Conejos	11,263	11,521	14,637	33,925	515	535	700	1,062
Costilla	9,670	10,090	10,345	17,849	514	526	537	747
Crowley	4,521	4,545	5,073	14,778	465	506	531	673
Custer	1,856	1,884	2,339	10,497	65	69	90	235
Delta	17,622	28,063	34,863	114,403	936	1,157	1,721	3,676
Denver	956	239,985	777,593	11,715,231	108	7,912	39,633	324,143
Dolores	4,739	5,535	6,203	12,469	65	89	115	185
Douglas	6,927	12,896	33,072	266,484	424	791	2,068	7,835
Eagle	3,731	7,118	34,458	252,085	189	281	3,006	12,580
Elbert	14,671	15,491	16,228	43,089	313	397	474	1,553
El Paso	12,711	53,788	228,156	4,143,874	625	1,788	16,819	123,251
Fremont	3,656	5,170	14,240	182,292	237	297	1,226	6,208
Garfield	4,191	9,220	26,134	242,142	360	489	2,103	8,598
Gilpin	0	0	902	7,193	0	0	27	166
Grand	2,008	2,826	9,497	84,593	185	204	913	4,093
Gunnison	3,603	5,482	12,416	83,020	210	263	1,042	3,997
Hinsdale	561	563	888	3,736	3	4	14	59
Huerfano	4,019	4,242	6,338	30,732	105	114	259	933
Jackson	5,726	6,091	6,649	18,092	362	376	399	652
Jefferson	7,976	225,718	438,642	4,541,313	707	7,483	25,565	127,521
Kiowa	26,113	26,538	27,319	34,499	462	495	524	663
Kit Carson	47,113	55,595	59,684	96,637	1,310	1,545	1,786	2,678
Lake	0	223	3,017	46,076	0	3	211	1,096
La Plata	6,513	13,050	24,280	250,200	351	503	2,536	10,231
Larimer	18,846	47,253	130,302	1,610,883	1,396	2,344	9,924	51,820
Las Animas	8,348	9,360	14,435	71,510	311	335	790	2,120
Lincoln	24,612	27,524	30,234	49,477	700	823	1,104	1,532
Montrose	10,788	20,616	30,350	186,134	1,203	1,967	2,746	6,156
Logan	14,112	29,033	39,719	164,623	1,073	1,736	4,857	23,691
Mesa	16,556	38,034	89,790	724,472	2	2	39	102
Mineral	177	179	1,451	5,985	352	403	811	2,821
Moffat	8,679	10,627	15,162	129,846	204	321	1,022	4,185
Montezuma	7,904	12,444	19,005	124,144	794	1,228	2,184	6,232
Morgan	24,712	50,827	69,784	175,791	1,707	2,572	3,737	7,370
Otero	17,171	29,786	37,556	146,203	1,183	1,819	2,429	5,450
Ouray	1,878	1,893	2,983	14,029	95	96	191	509
Park	1,834	1,972	3,901	25,701	57	60	191	488
Phillips	15,508	21,644	24,296	38,835	763	983	1,158	1,480
Pitkin	873	3,320	24,936	249,082	36	104	2,851	11,154
Prowers	25,992	31,380	38,419	125,080	1,299	1,508	2,094	4,869
Pueblo	16,031	34,053	82,902	858,407	684	1,481	6,003	29,153
Rio Blanco	3,716	4,259	6,366	72,813	247	261	480	1,859
Rio Grande	13,392	25,616	33,056	92,447	930	1,206	1,848	3,582
Routt	6,944	9,854	22,246	163,589	291	405	1,797	8,199
Saguache	9,291	10,984	13,326	23,906	843	884	1,064	1,343
San Juan	0	0	754	15,752	0	0	24	62
San Miguel	1,766	1,959	4,897	31,225	59	63	437	1,132
Sedgwick	12,406	14,244	15,738	27,468	506	567	624	971
Summit	282	1,296	22,456	174,491	30	106	2,183	8,906
Teller	387	1,294	4,445	47,277	11	18	431	1,583
Washington	42,065	45,563	47,947	66,862	1,107	1,235	1,377	1,738
Weld	63,056	167,728	212,145	1,069,876	9,951	15,057	19,401	43,643
Yuma	63,154	70,101	73,978	116,419	1,718	1,940	2,210	3,201
State Total	788,605	1,806,081	3,797,463	38,543,673	42,442	78,930	231,670	1,211,099

¹County totals include all non-agricultural sectors of the local economy.

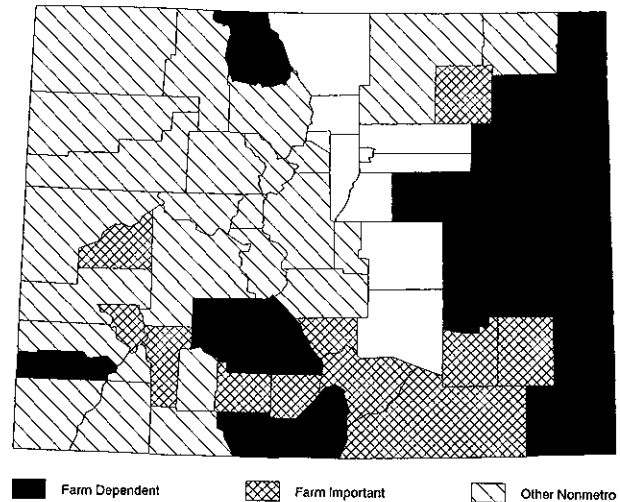
Farm Dependent and Farm Important Counties

Farm dependent counties are counties that receive 20 percent or more of their labor and proprietor income from farming and ranching (the farm production sector). In 1987, 17 Colorado counties met this criterion.

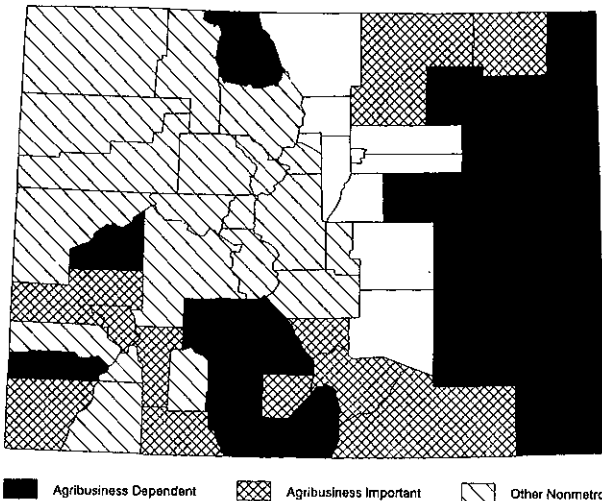
Farm important counties are counties that receive 10 to 20 percent of total labor and proprietor income from the farm production sector. Eleven counties met this criterion.

Thus, 28 of the 63 counties in Colorado are classified as either farm dependent or farm important counties. In these counties, farming and ranching is either the major economic sector or one of the primary sectors. For example, in the farm dependent counties, the farm and food system provided 58 percent of the total labor and proprietor income and accounted for 64 percent of the employment. Total economic activity, income and employment in these counties all mirror the economic well-being of farming and ranching.

Farm Dependent and Important Counties, 1987



Agribusiness Dependent and Important Counties, 1987



Agribusiness Dependent and Important Counties

The significance of agriculture to local economies also can be indicated by identifying the relative importance of agribusiness income in each county. In 1987, Colorado had 22 **agribusiness dependent** counties – those receiving more than 20 percent of total labor and proprietor income from agribusiness activities.

Eleven more **agribusiness important** counties received between 10 percent and 20 percent of their income from agribusiness.

Thus, over half of the counties in Colorado are agribusiness dependent or agribusiness important. The business of agriculture is the major source of economic activity in these counties. Policies to promote stability and development within agriculture are important to their economic health.

Front Range vs. Rest of State

Agribusiness is an important component of the economic fabric of the 13-county Front Range, as well as rural Colorado.

Weld County is the only Front Range county that is agribusiness important, according to the definition above. Nevertheless, the Front Range accounts for more agribusiness jobs and income than the rest of the state. In 1987, total labor and proprietor income from agribusiness was \$1 billion in the Front Range and \$793 million for the rest of the state. For that year, the Front Range accounted for 48,000 agribusiness jobs, while the remainder of the state accounted for 31,300 such jobs.

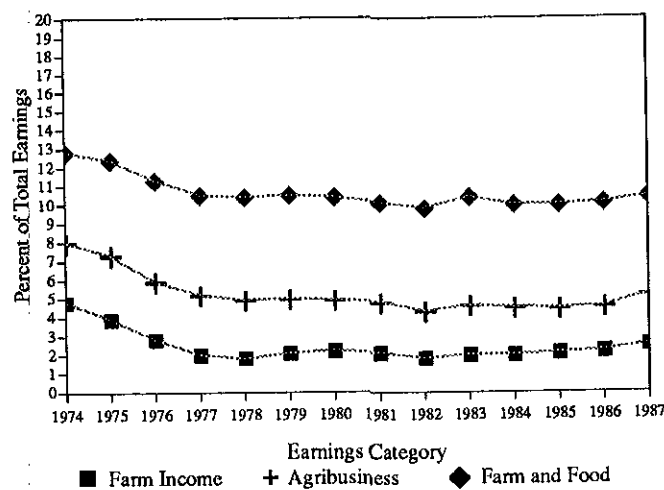
Changes in Farm and Food Sector Contributions Over Time

Data for 1974-87 suggest that agriculture remains a vital and important contributor to the state's economic well-being. Per capita income in the farm dependent and important counties increased significantly from 1984 to 1987. By 1987, many of the farm dependent counties were among the leaders in the state in per capita income.

Agribusiness sector income was 8.0 percent of total state income in 1974, fell to 4.1 percent in 1982, and rebounded from that low to 4.7 percent in 1987. Since 1974, the share of Colorado labor and proprietor income coming from the farm and food system declined from 12.8 percent to 9.8 percent. However, since 1977, the decline has been a modest 0.5 percent.

Some of these trends in income and employment are significant, but they must be kept in perspective. Significant growth in the state's economy between 1973 and 1987 occurred in the metropolitan counties and in sectors outside the farm and food system. Substantial growth in the economies of metropolitan counties obscures the fact that agriculture remains the dominant business in the agribusiness dependent and important counties. In this group of counties, the agribusiness sector and the total farm and food system are maintaining and, more recently, increasing their importance in both absolute and relative terms.

Importance of Farm and Food System



This fact sheet summarizes data presented in *Colorado's Farm and Food System: Farm and Agribusiness Contributions to the Colorado Economy, 551 A*, by T.A. Miller, S.L. Gray and W.L. Trock. Partial funding for the summary and bulletin were provided by the Colorado Department of Agriculture. Requests for the bulletin should be directed to the Bulletin Room, Colorado State University.

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From Resubmit 8/26/92

For What It's Worth

An open letter to *The Denver Post*

I want to express my real concern about the style of journalism in the recent *Denver Post* series "The new harvest," (July 19-22) written by Pat O'Driscoll and Mark Obmascik and a subsequent column written by Mark Obmascik on July 25 headlined "Colorado farmers should catch the wave of water conservation."

My favorite journalism professor had one rule of good journalism: "Get the story, and get it right, damnit." That's not what happened with "The new harvest" series.

Worse, in the environmental column (Saturday, July 25, "Colorado farmers should catch the wave of water conservation") Obmascik manages to make a complete fool of himself.

Exactly contrary to Obmascik's allegations, the irrigated agriculture industry has worked long and hard to promote water conservation. Farmers, the nation's land grant universities (including Colorado State University), the Cooperative Extension Service, the USDA's Soil Conservation Service and Agricultural Research Service, as well as manufacturers of irrigation equipment have spent years, and literally millions of research dollars, fine-tuning irrigation practices to conserve water and increase irrigation efficiency.

Moreover, Colorado's ag sector is served by numerous water conservancy/conservation districts. Directors of these districts are typically farmers who have served as volunteers, often for years and years, to conserve and manage water as a strategic resource.

It's genuinely appalling that Obmascik apparently is unaware of this. If he is aware, it is even more appalling that he chooses not to report them.

Obmascik insists incorrectly that agriculture contributes only 3.25 percent to the state's economy while "consuming" 92 percent of the state's water. Both figures are open to question.

The 3.25 percent figure that Obmascik uses is indeed the figure used in the U.S. Department of Commerce, Survey of Current Business report, and I suppose it can be thinly defended on that basis.

A sharp reporter would have realized, however, the report paints an incomplete picture, and would have, at the very least, made mention of additional, more comprehensive data readily available from Colorado State University. The CSU report (Farm and Food Contributions to the Colorado Economy, February, 1991) was done in cooperation with the Colorado Department of Agriculture and the Colorado Agricultural Statistics Service (either of whom would have been logical news sources for the series).

The CSU report shows that agribusiness (including agricultural inputs, farm production and processing and marketing) contributed \$1.8 billion, or 4.7 percent of total state income in 1987 (the data available when the study was done). With 79,000 jobs, the sector furnished 6.5 percent of all employees and also accounted for \$11.5 billion in annual sales.



BY SALLY SCHUFF

If you add the food wholesaling and retailing sector to the agribusiness sector to get the real look at the activities needed to deliver food to consumers (and let's don't forget that that is what agriculture is all about), you would find a total contribution of \$26.9 billion in gross sales, 231,000 jobs equal—to 19.1 percent of the state's total. The \$3.8 billion raised by the farm and food system for labor and proprietor income is equal to 9.8 percent of the state's total.

Does irrigation "consume" 92 percent of the state's water? Farmers may have the right to use 92 percent of the state's water for irrigation. But, "using" it and "consuming" it are two entirely different things, says Tom Cech, manager of the Central Colorado Water Conservancy District at Greeley.

Irrigation, you see, applies water to crops: a percentage of the irrigation water is actually consumed by the growing plants—varying from from 40-60 percent. But, the rest of the water seeps back to streams as "return flows." Return flows actually stabilize flows in river basins where there is irrigation. In this way, water can be used and reused as many as three to seven times, explains Forrest Leaf, water resources engineer at the Central District.

Obmascik's series comes down pretty hard on farm subsidies.

However, it failed to make clear that non-program crops (such as hay, fruits and vegetables) are grown on many of the acres eligible for supplemental Bureau water. Naturally, those growers can't "double dip." It did not make clear that much of the state's irrigation is groundwater which is pumped totally at the expense of farmers. It did not make clear that a large percentage of the government price support and CRP payments and go to dryland farmers who do not irrigate.

Let's talk about government subsidies, an admittedly touchy subject. I don't know a farmer who wouldn't be happier making all of his income in the marketplace through higher prices for what he produces. But remember, it has been determined by Congress that it is in the national interest to keep our agricultural infrastructure healthy and to keep food prices low.

That policy has benefited all Americans, who spend less of their take-home pay for food than almost any other nation—about 10 percent. The Chinese spend about 50 percent. The French pay 16 percent, the Japanese, 18 percent, the Mexicans, 32 percent.

Without low food prices, Americans would have fewer dollars available to spend on other needs—not to mention some extras that are helping to put pressure on irrigation water: fly rods, raft trips, wilderness adventures. As State Sen. Don Ament is fond of saying, "Agriculture subsidizes the lifestyle of all Coloradans." □

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