



The Impact of
AGRIBUSINESS

In the High Plains Trade Area



Dear Friends,

The Texas High Plains is one of the most diverse and intense agricultural areas in the world. It is a major economic driver not only of the region, but the State of Texas as well. The scope and economic impact of the agriculture sector of the Panhandle economy would rival the entire output of most states and many countries.

The mission of the Agriculture Committee of the Amarillo Chamber of Commerce is to represent the business of agriculture to the business community at large and to foster cooperation within the entire community to ensure that we continue the beneficial relationship that has made Amarillo the thriving city it is. This publication details the contribution of agriculture and agribusiness to the regional economy and its importance to all who live here.

Our farmers and ranchers have fought their way through five years of drought and price fluctuations that were previously not thought possible. The ups and downs of agriculture can certainly take their toll, and it is critical that those farmers and ranchers know they have the support of the business community at large and their interests are represented to the members of the Chamber as well as local, state and national leaders. I know our community and business leaders are squarely behind agriculture and agribusiness on the High Plains. Thank you for that commitment.

I am honored to serve as the chair of the Agriculture Committee, and I look forward to continuing to work with you toward our common goals.

Sincerely,

Don R. Topliff, Ph.D.
Dean and Professor
College of Agriculture, Science and Engineering
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INTRODUCTION

Agriculture is a primary driver in the Texas High Plains economy. The Texas High Plains is one of the most unique and diversified agricultural areas in the world. The temperate weather conditions and the availability of irrigation water have made the area well suited to a number of agricultural enterprises, including more than 25 commercially grown crops and one of the most concentrated homes for confined livestock operations in the world.



In this study, the importance of agriculture is examined for a 26-county region of Texas referred to as the "High Plains Trade Area." The counties in the area were selected on the assumption that Amarillo served as their primary regional trade center. Parmer, Castro, Swisher, Briscoe, Hall and Childress counties served as the southern border of the region, with all counties north in the Texas Panhandle being included. The area encompasses 16.5 million acres of which 15.3 million acres is used for agricultural purposes: 9.5 million acres in pasture and 5.8 million acres in crops. Approximately 1.5 million acres of the cropland is in irrigated production.

DID YOU KNOW???

The Texas High Plains is one of the most important agricultural areas in the world. But, it can be difficult to conceptually grasp the magnitude of the industry. One way is to think of the 26 counties of the High Plains Trade Area – approximately one-tenth the size of Texas - as being a state.

If it were a state, did you know that it would rank:

- First or second in fed beef production, depending on the year.
- In the top 15 states in dairy, swine, corn, cotton, sorghum and wheat production.

Relative rank to other counties in Texas:

- Top eight counties (Deaf Smith, Parmer, Castro, Hartley, Hansford, Dallam, Moore and Sherman) in Ag receipts.
- Top six counties (Deaf Smith, Castro, Parmer, Hartley, Hansford and Dallam) in fed beef production.
- Top six counties (Ochiltree, Dallam, Sherman, Hansford, Moore and Lipscomb) in swine production.
- Four of the top six counties (Castro, Hartley, Parmer and Deaf Smith) in dairy production.
- Top two (Dallam and Hartley) in corn production.
- Top two (Hansford and Ochiltree) in wheat production.



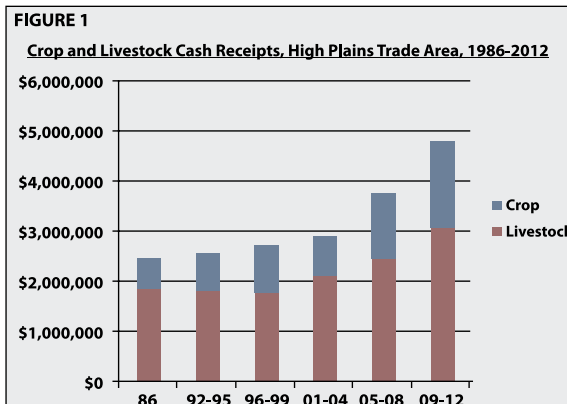
THE AGRICULTURAL INDUSTRY

The contribution of the agricultural industry to the High Plains Trade Area economy is immense. The total of value-added agricultural commodities, government payments to producers, and the payroll of agribusiness firms averaged more than \$6.2 billion per year in the trade area from 2009-2012, Table 1. Another measure of the importance of area agriculture is its impact for the Texas economy.

Table 1. Annual Total Agricultural Cash Receipts, Government Payments and Agribusiness Payroll, High Plains Trade Area, 2009-2012.

Agricultural cash receipts	\$4,763,540,000
Government payments to farmers	\$127,902,000
Agribusiness payroll	\$1,347,900,000
Total	\$6,239,342,000

In all likelihood, \$6.2 billion underestimates dramatically the value of the agricultural industry. Data limitations result in the exclusion of public sector employees involved in agriculture such as Farm Service Agency (FSA), Texas A&M AgriLife Research and Texas A&M AgriLife Extension Service, and Natural Resource Conservation Service (NRCS), among other public entities.



ANALYSIS OF PRODUCTION AGRICULTURE

The importance of production agriculture in the trade area cannot be overstated. Cash receipts for crops, value-added livestock and livestock products totaled almost \$4.8 billion in the High Plains Trade Area, Table 2. The current cash and value-added sales represent a 27.4 percent increase over the previous four-year period (\$3.7 billion). Of course, the direct value of agricultural production is not the only benefit to the local economy. Many production expenses are paid to local suppliers. Farmers and ranchers also spend part of their wages and profits in the region

eating at local restaurants and buying groceries, clothing and movie tickets. In turn, employees of these businesses purchase supplies and spend wages at other local businesses. Money is multiplied as it circulates through the economy. The original \$4.8 billion economic contribution from farm and ranch production leads to a total region-level economic output of \$8.1 billion. Some money does leave the region as people and businesses purchase goods and services outside the county or state. These leakages reduce the overall economic contribution of agricultural production. However, a good deal of the money that is spent outside High Plains region is still spent in Texas, so the farm-level production leads to a larger state-level output of \$10.1 billion.

Table 2. Average Annual Agricultural Cash Receipts, High Plains Trade Area, 2009-2012.

	Value (\$1,000,000)	Percent of State Total	Regional Economic Impact* (\$1,000,000)	State Economic Impact* (\$1,000,000)
Crops:				
Corn	\$688.1	58.0	\$1,043.8	\$1,383.9
Wheat	\$218.4	40.8	\$331.3	\$439.2
Cotton	\$320.9	13.2	\$536.7	\$721.9
Sorghum	\$133.6	20.3	\$202.6	\$268.6
Ensilage	\$138.3	63.3	\$219.8	\$285.4
Hay	\$126.2	9.9	\$200.5	\$260.3
Other Crops	\$73.1		\$116.2	\$150.9
Total Crop Receipts	\$1,698.6		\$2,650.9	\$3,510.2
Livestock and Livestock Products:				
Fed Beef - Value Added	\$1,865.8	78.5	\$3,555.6	\$4,367.5
Cow-calf and Stockers	\$357.4	8.5	\$681.1	\$836.6
Hogs	\$204.9	94.2	\$277.3	\$322.5
Dairy	\$595.3	36.9	\$866.6	\$1,043.1
Other	\$27.0		\$36.6	\$42.6
Total L & LP	\$3,050.4		\$5,417.2	\$6,612.3
Other Ag-Related	\$14.5		\$21.8	\$25.5
Total Agricultural Receipts*	\$4,763.5		\$8,089.9	\$10,148.0

*Does not include impacts of forward-linkages through the processing sectors.

The economic contribution of agriculture in the trade area has almost doubled since the first Agribusiness publication was written in 1986. The combination of crop receipts and value-added livestock (Figure 1) production increased steadily from 1986-2004 before escalating sharply through the 2009-2012 time period. Several factors contributed to the recent rapid increase, including the advent of the biofuels industry, which led to higher grain prices and the development and explosive expansion of both the swine and dairy industries in the region. Agricultural receipts averaged more than \$1 billion more annually during the 2009-2012 time period versus 2005-2008 despite the area suffering through two years of drought (2011 and 2012), which hurt agricultural production significantly.

CROP PRODUCTION

The long growing season and the irrigated land make the area ideally suited for raising a number of crops. Some of the best quality corn used in chip production is grown in the region. A variety of vegetables, in addition to all major field crops, are produced in the High Plains. The well-suited conditions also provide excellent potential for the development of high-value specialty crops in the area.



More than 25 crops are produced commercially in the High Plains Trade Area. Primary crops include corn, wheat, cotton, sorghum, ensilage and hay. Of the primary crops grown in the region, 58 percent of the state's corn, 40.8 percent of the wheat, 13.2 percent of the cotton, 20.3 percent of the sorghum, 63.3 percent of the ensilage and 9.9 percent of the hay are grown in the area.

The total value of all crops sold within the area averaged about \$1.7 billion annually in 2009-2012. Corn led the way with total sales of \$688.1 million. Cotton accounted for \$320.9 million in sales, followed by wheat with \$218.4 million in sales. Another grain with significant sales was sorghum, which accounted for \$133.6 million. Cash receipts for ensilage, hay, vegetables, soybeans, alfalfa and other crops contributed \$337.7 million to the area economy. The expenditures incurred in crop production results in a multiplier effect on the regional and state economies. The impact from High Plain's crop production was estimated to be \$2.7 billion and \$3.5 billion in the region and the state, respectively.



LIVESTOCK PRODUCTION

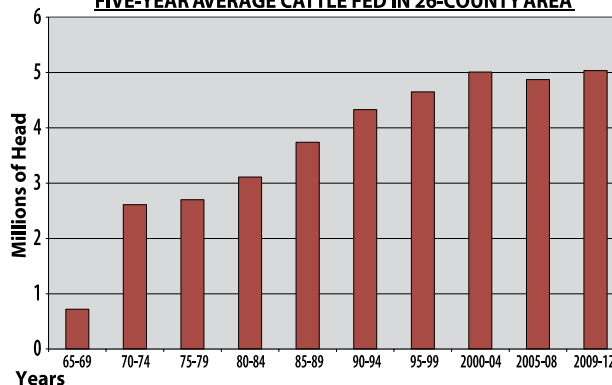
Livestock and livestock products include animals, fowl, fish, animal specialties (such as wool) and recreational leases. Value-added sales of fed beef exceeded all other categories in this group, with \$1.9 billion. This was followed by dairy, totaling \$595.3 million. The cow-calf/ stocker operations and swine production rounded out the top four with sales of \$357.4 million and \$204.9 million, respectively. The total sales for livestock and livestock products averaged almost \$3.1 billion annually in 2009-2012. The impact on the regional and statewide economies from High Plain's livestock operations was estimated to be \$5.4 billion and \$6.6 billion, respectively.

The Texas High Plains is often referred to as the Cattle Feeding Capital of the World and with just cause. If the 26-county area was considered a state, it would rank first or second in fed cattle production among all states, depending on the year. Fed cattle marketed in the area averaged just under 5 million head annually during 2009-2012 time period, which corresponds to 78.5 percent of the state's total.

The fed cattle industry has served as the backbone for the development of one of the most highly productive agricultural regions in the world. The temperate climate and friendly environmental conditions have led to a steady increase in fed cattle since the industry's initial explosion in the early 1970s. From 1969-2004, the growth in the fed cattle industry in the area averaged 100,000 head fed annually, Figure 2. During 2000-2004, fed cattle marketing stabilized, suggesting this industry may be reaching maturity in the region.

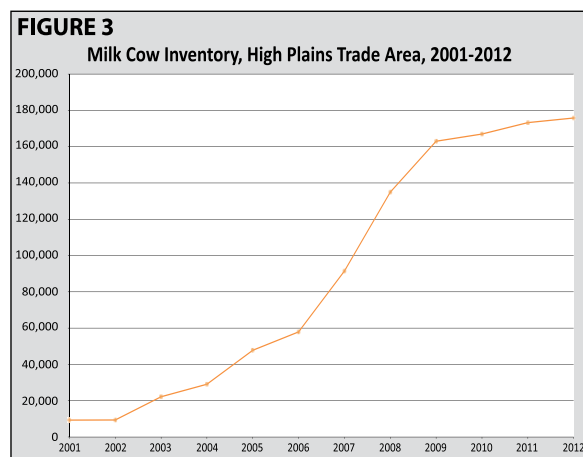
FIGURE 2

FIVE-YEAR AVERAGE CATTLE FED IN 26-COUNTY AREA



Cattle feeding is a capital-intensive, labor-efficient industry. However, it still provides jobs for more than an estimated 2,500 employees in the High Plains Trade Area. The direct employment is just the tip of the iceberg with respect to the industry's economic impact.

The cattle feeding industry has brought satellite industries such as Tyson Fresh Meats, JBS Swift Co. and Excel Fresh Meats, which are all major employers in the area. The industry's presence in the area results in price premiums for local cow-calf producers, stocker operations and grain farmers. Probably the best example of the immense magnitude of the cattle industry in the area is the realization that approximately 800,000 semi-loads of feed and cattle have to be moved annually to support the industry in the area at its current level of production.



The presence of dairy operations in the High Plains had decreased to virtually nothing by the early 1990s with just a few left such as the Hinders Dairy in Canyon. However, the trend has dramatically changed. In 2000, just 3,700 dairy cows were in the region; however, by 2012 dairy cow inventory was approximately 176,000 cows, Figure 3. On average for the 2009-2012 time period, 40.4 percent of the state's dairy cows were located in the region. Why? The Southwest Cheese Plant in Clovis, N.M. opened in 2006, leading to a rapid expansion in dairy cow numbers in the region. Currently, this plant employs more than 300 people and requires 3.8 billion pounds of milk annually. The expansion in dairy cow inventories was escalated with the opening of the Hilmar Cheese Co. in Dalhart during 2007. Southwest and Hilmar have both expanded in the last five years, increasing the demand for milk to meet their processing needs.

The impact of the dairy industry in the trade area is expected to continue to increase over the next decade. The Hilmar plant processes more than 200 tanker loads of milk daily and is planning an expansion that will be completed sometime in 2015. The expansion will allow them to increase production by 20 percent, resulting in their ability to process 12 million pounds of milk per day. Many of the dairies required to produce the milk will be located in the trade area. This will be a boost to the regional economy, considering a 3,000-head dairy farm usually includes a \$4 million capital investment and generates about 38 jobs.

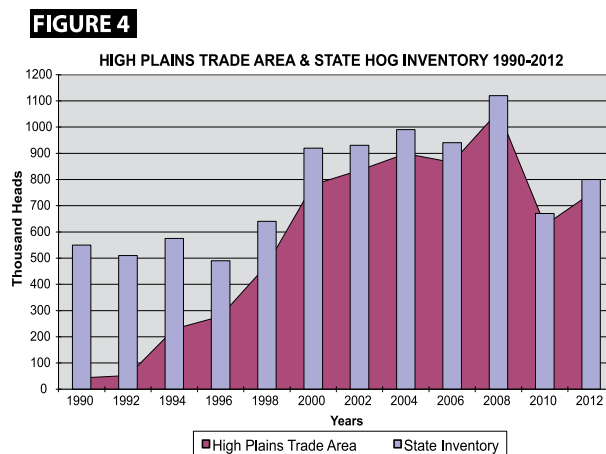
No discussion of production agriculture would be complete without mentioning the cow-calf industry, which has made the High Plains famous. Approximately 268,000 cows were in the region in 2012, about 40,000 fewer than normal. The reduction

can be traced to the impact of significant droughts during 2011 and 2012 that caused many herds to be partially liquidated. Many of the historic ranches remain in operation today including the Frying Pan, LX, XL, JA, Bravo and LIT.

The development of the feedlot industry has changed the focus of many of the ranches from cow-calf to stocker operations. Combined with wheat production that provides lush winter pastures, the region has become one of the most concentrated areas of stocker production in the country. In any given year, several hundred thousand stockers are pastured in the High Plains Trade Area.

Swine production has become an integral part of High Plain's agriculture. The same conditions that brought the cattle industry to the area have also attracted the hog industry. In 1992, 10 percent of the state's hogs were grown in the 26-county region, Figure 4. In 1993, inventories grew to 20 percent, and in 1994, the area's portion of the state's total doubled again to 40 percent. By 2008, the High Plains Trade Area hog numbers topped a million head and the area's total exceeded 94 percent of the state's hog inventory. A loss of one of the swine operations and a reduction in size of another led hog inventories in the region to decrease to an estimated 750,000 head in 2012, still accounting for 93.4 percent of the state's total. Value-added swine production averaged 94.2 percent of the state's total for 2009-2012.

The future of the swine industry in the trade area is uncertain. Seaboard Farms, Texas Farm and Cargill Pork have all established significant hog operations in the Texas and Oklahoma Panhandles and are likely to remain here at some level of production. Any expansion in this industry will depend on whether another packing plant is built. At this time, there are no plans for another plant.



The future of production agriculture in the High Plains is a bright one despite incurring significant drought and volatile commodity prices. In addition to the relatively stable fed cattle and hog numbers in the trade area, a continued expansion of the dairy industry is anticipated that will positively impact the economy in the region.

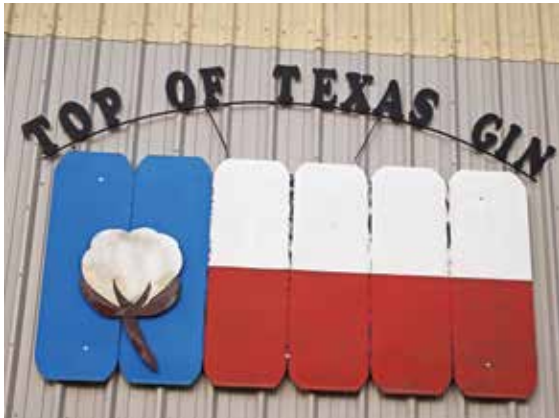
A primary component of the Other Ag-Related category of Livestock and Livestock Products is income from horse production. The 2012 Census of Agriculture estimates the number of horses in the region at 18,611 head. While the inventory number in the region isn't large compared to other livestock

operations, the economic importance of the equine industry is. It is estimated that \$1,950 is spent per horse in feed and care annually. Sales of horses often range from \$1,000 for a basic ranch horse to several thousand dollars for a show horse, providing significant income to the region. The estimated sales in the area during 2012 were \$4.8 million, according to the Census of Agriculture.



The American Quarter Horse Association, located in Amarillo, is the largest breed organization in the world. AQHA has a membership of more than 270,000 people in 86 countries and has registered more than 5 million horses in 95 countries. AQHA, along with the American Quarter Horse Foundation, employs 234 people, with an annual payroll of about \$11 million.

The impact of the equine industry reaches far beyond the production of horses in the trade area. The American Quarter Horse Heritage Center and Museum and the Amarillo National Center attract equine events and visitors that add millions of dollars to the economy of the Texas High Plains each year.



ANALYSIS OF AGRIBUSINESS

Agribusiness is a concept of the agricultural industry, which includes more than just farmers and ranchers. According to John H. Davis of Harvard University, who coined the term, agribusiness involves “the sum total of all operations of the farm; and the storing, processing and distribution of farm commodities and the items made from them.” Thus, by this definition, many phases of the agricultural industry are off-the-farm activities. Many consumers do not think of the processing and manufacturing of clothing and food as being a part of the vast agribusiness

complex. It often takes an interruption in the process, such as a drought, to re-establish the link between foodstuffs on the shelf of our favorite supermarket and the basic commodity produced on Texas farms and ranches.

According to “2012 County Business Patterns” and the “2012 Census of Agriculture,” there are approximately 51,590 salaried employees who work in jobs related to agribusiness in the High Plains Trade Area, excluding government employees, Table 3. These same publications show the area agribusiness accounted for a payroll of \$1.35 billion. In the “2012 County Business Patterns,” the agribusiness sector has been broken down into five categories: retail trade and food service, wholesale trade, manufacturing, agricultural services and transportation and warehousing. The final category in Table 3, Farm and Ranch employment was estimated from “2012 Census of Agriculture” data.

Table 3. Agribusiness Employment and Payroll, High Plains Trade Area, 2012

Industry	Number of Employees	Annual Payroll (\$1,000)	Total Establishments
Retail Trade and Food Services	20,435	\$328,079	1,252
Manufacturing	12,665	\$512,703	129
Wholesale Trade	4,561	\$180,884	217
Agricultural Services	411	20,229	79
Transportation and Warehousing	1,085	\$49,909	86
Farm and Ranch	12,433	\$256,097	
Total	51,590	1,347,901	1,763

In the following section, the agribusiness components within each of the six categories are discussed in terms of their importance to the overall economy of the area.

Manufacturing

“County Business Patterns” shows 19 manufacturing industry groups. Of these, 10 were classified as agribusiness, with eight considered relevant to the area: food and kindred products; lumber and wood products; leather and leather products; furniture and fixtures; paper and allied products; textile mill products; chemicals and allied products; and machinery and apparel manufacturing. These eight agribusiness industries employed 12,665 people with an estimated 2012 payroll of \$512,703,000, Table 4.

Food and Kindred Products

This category includes firms that manufacture meat products, dairy products, bakery products, sugar and confectionery products, fats and oils, and other food products. This industry is the largest of the agribusiness-related manufacturing industries, with a total of 11,405 employees or 90.1 percent of the total agribusiness employment. This industry also has the largest annual payroll of the 8 manufacturing groups, at \$462,014,000.

Most of the employment in the agricultural manufacturing sector is directly related to livestock processing. The sixteen packing plants in the area, including such nationally known firms as Excel Fresh Meats, JBS Swift and Tyson Fresh Meats and regional firms Caviness Packing Co. and Booker Pack LP, had an estimated 10,728 salaried employees with an annual processing capacity of 4.9 million head. A number of other well-known companies are in the agricultural manufacturing sector in the trade area, such as Arrowhead Mills, Plains Dairy Products and Pacific Cheese Co. Inc.



Lumber and Wood Products

This category includes everything made from lumber and wood products, except wood furniture. This industry employs 70, with a \$2,863,000 payroll. This category is made up of firms that produce millwork, plywood and structural members, wood containers, wood buildings, mobile homes and miscellaneous wood products.

Leather and Leather Products

Manufacturers of leather and leather products contribute substantially to the trade economy. In 2012, this industry employed 185 people with an estimated 2012 payroll of \$7,567,000.

Furniture and Fixtures

Agribusiness is important to these manufacturing companies because it supplies the cotton, textile fabrics and lumber used in many of their products. This industry employs 130 people and has an annual payroll of \$2,802,000.



Paper and Allied Products

The manufacturing of paper and allied products accounts for the employment of approximately 175 people. The annual payroll is \$7,158,000. The category consists of firms that produce folding paperboard boxes, corrugated and solid fiber boxes, sanitary food containers, fiber cans and drums.

Textile Mill Products

This industry makes cloth from synthetic and natural fiber. The process includes both weaving and knitting, and the products generally go to the apparel trade. This area business employed 200 people and had a payroll of almost \$2,760,000 in 2012.

Chemicals and Allied Products

This segment develops plant and livestock protection chemicals, fertilizer and related products. This sector employs 120 people with \$11,216,000 payroll.

Machinery and Apparel Manufacturing

Machinery and apparel manufacturing were consolidated in this publication due to the relatively small size of these enterprises in the area. Machinery manufacturing includes businesses that produce equipment to support production agriculture, such as the manufacturing of feed mill components and livestock trailers. Apparel manufacturing encompasses the construction of apparel, hats, caps and fabricated textile products such as curtains, canvas, and automotive and apparel trimming. Eleven companies employing 380 people with an annual payroll of \$16,323,000 were involved in these two groups.

Table 4. Agricultural Manufacturing Sector, High Plains Trade Area, 2012

	Number of Employees	Annual Payroll (\$1,000)	Total Establishments
Food and Kindred Products	11,405	462,014	73
Lumber and Wood Products	70	2,863	7
Leather and Leather Products	185	7,567	5
Furniture and Fixtures	130	2,802	14
Paper and Allied Products	175	7,158	2
Textile Mill Products	200	2,760	9
Chemical and Allied Products	120	11,216	8
Machinery and Apparel Mfg.	380	16,323	11
Total	12,665	\$512,703	129

Table 5. Agricultural Wholesale Trade Sector, High Plains Trade Area, 2012

Goods	Number of Employees	Annual Payroll (\$1,000)	Total Establishments
Durable Goods	445	\$15,977	37
Nondurable Goods	4,116	\$164,907	181
Total	4,561	\$180,884	218

Wholesale Trade

Agribusiness firms within the wholesale trade sector employed 4,561 people and had an annual payroll of \$180,884,000. Wholesale trade consists of durable goods and nondurable goods. Firms that handle nondurable goods are engaged in the distribution of paper and paper products, groceries and related products, and raw farm products. They employed 4,116 and paid \$164,907,000 in annual payroll. This category is made up of wholesalers who deal in general groceries, frozen foods, dairy products, poultry and poultry products, and meat and meat products. This industry is responsible for servicing all types of grocery stores, from large supermarkets to small convenience stores. The major wholesalers involved in paper products and groceries are Ben E. Keith, Georgia Pacific and Affiliated Foods Inc. The relationship between durable and nondurable goods is shown in Table 5.

Agribusiness components of the durable goods category are wholesalers of furniture, lumber, plywood and millwork, and farm machinery and equipment. These businesses account for 445 employees and \$15,977,000 in annual payroll. Farm machinery, furniture, lumber and plywood, and millwork were the largest durable goods wholesalers. A few of the companies in these groups are La-Z-Boy Furniture Galleries, Oglesby Equipment Co., and Seale-Amerson Lumber and Building Co. Western Equipment.

Table 6. Retail Trade and Agricultural Services, High Plains Trade Area, 2012

	Number of Employees	Annual Payroll (\$1,000)	Total Establishments
Food Service	13,228	\$182,279	777
Food and Beverage Stores	3,935	\$70,894	143
Building Materials and Garden Services	1,709	\$51,047	153
Miscellaneous Retail	1,563	\$23,859	179
Agricultural Services	411	\$20,229	79
Transportation and Warehousing	1,085	\$49,909	86
Total	21,931	\$398,217	1,417

Retail Trade and Food Service

"2012 County Business Patterns" lists eight retail trade categories in the High Plains Trade Area, but only four of the eight categories were determined to be agribusiness related. The retail categories used in this study were food services, food and beverage stores, building materials and garden supplies, and miscellaneous retail. These four industries employed 20,435 people and had an estimated annual payroll of \$328,079,000 in 2012, Table 6.

The food services category includes all places serving food, from fast food to luxury dining. It is the largest segment in this study in terms of annual payroll and number of employees and accounts for 13,228 employees and an annual payroll of \$182,279,000. There are 777 restaurants. A few of the best known are Arby's, Dairy Queen, McDonald's, Burger King, Kentucky Fried Chicken, Taco Villa, Wendy's, Pizza Hut, Outback Steakhouse, Texas Roadhouse and the locally owned Big Texan Steak Ranch. Local cafes and restaurants are also important institutions in many communities.



Food stores include grocery stores, meat markets, fruit and vegetable markets, candy stores, bakeries and dairy product stores. They had an annual payroll of \$70,894,000 and 3,935 employees. This category includes stores such as United Supermarkets, Braum's Ice Cream and Dairy Stores, Allsup's and Toot'n Totum.

Building materials and garden supplies include lumber yards, retail nurseries and garden stores. This group employed 1,709 people, with an annual payroll of \$51,047,000. Some of the major retailers are Coulter Gardens and Nursery, Love and Sons Nursery, Lowe's Home Improvement and Amarillo Building Products Inc.

Agricultural Services

This category includes three sub-headings of agricultural services: veterinary services, animal services (except veterinary), and landscape and horticultural services. It has approximately 411 employees and accounts for \$20,229,000 in payroll, Table 6.

Transportation and Warehousing

This group of firms includes those that warehouse, store and/or transport commodities. Eighty-six companies were engaged in

these trades within the study area. Companies such as Attebury Grain, Perryton Equity Exchange and Ag Producers Co-op fall into this category. The payroll for businesses in the category was estimated at \$49,909,000 with approximately 1,085 employees, Table 6.



Farm and Ranch

“County Business Patterns” underestimates agricultural employment since it does not include farm/ranch employment in their data set. Interestingly, in addition to the traditional farm and ranch workers, employees of confined livestock operations fall into this category. According to the “2012 Census of Agriculture,” 7,343 people were employed more than 150 days a year and another 5,090 were employed less than 150 days a year on farms/ranches in the High Plains Trade Area. These employees received an estimated \$256,097,000 in wages during 2012. Some of the major confined livestock operations in the area include Friona Feedyard, Caprock Cattle Feeders, Cactus Feedyard, Texas Farm and AzTx Cattle Co.

It should be noted that considering Farm and Ranch employees improves the estimates of agricultural employment in the private sector, however, still significantly under values the importance of agriculture to the trade area economy. According to the “2012 Census of Agriculture,” there are 9,742 farm and ranch operators in the area. Also it was not possible to delineate the agricultural component of some categories of “2012 County Business Patterns” such as finance. In addition, employees in the public sector related to agriculture were not accounted for in this analysis.



HIGHER EDUCATION, AGRICULTURAL RESEARCH AND EXTENSION

West Texas A&M University, a member of The Texas A&M University System, is located in Canyon and provides opportunities for higher education in the region. Students of West Texas A&M can pursue undergraduate and graduate degrees, including a Ph.D., in a number of agricultural fields as well as business, nursing, education and engineering, among others. The Department of Agricultural Sciences includes Agribusiness, Agricultural Business and Economics, Agricultural Education, Agricultural Media and Communications, Animal Science, Dryland Agriculture, Environmental Agriculture, Equine Industry and Business, and Plant, Soil and Environmental Sciences. These programs focus on undergraduate and graduate education and research in areas of critical importance to the High Plains of Texas. Research on semi-arid agriculture, water management, equine nutrition and management issues related to concentrated livestock operations, environmental quality and agricultural pest management are key areas of study for master's and doctoral students.



Texas A&M AgriLife Research and Extension Center at Amarillo is the regional home of faculty and staff of Texas A&M AgriLife Research and Texas A&M AgriLife Extension Service, two of the seven agencies in the Texas A&M University System. The chief mission of these agencies is to conduct research and educational programs that develop and transfer new technology to benefit area producers. AgriLife Research and AgriLife Extension programs address: alternative irrigated and dryland crop production systems; improved wheat genetics including drought tolerance and pest resistance; insects and disease control; conservation tillage, residue management and grazing systems; beef cattle nutrition, health and waste management; water and air quality; bioenergy; and natural resource management. The Center is headquarters for AgriLife Extension's county agent program for 22 counties in the Panhandle, which provides a delivery network for science-based information, training and educational programs in agriculture, family and consumer sciences, 4-H and youth development and community enrichment.

In addition, WTAMU, AgriLife Research, AgriLife Extension, the U.S. Department of Agriculture-Agricultural Research Service Conservation and Production Laboratory at Bushland, and the Texas A&M Veterinary Medical Diagnostic Laboratory collaborate through an organization known as the Cooperative Research, Education and Extension Team (CREET). It operates with a one-

program concept of scientific, educational and Extension expertise of the combined faculties and scientists of these five agencies. The CREET members have a shared commitment to upgrading scientific excellence and multidisciplinary teamwork among 80 scientists and engineers in five different agencies/universities and at the multiple locations. CREET is an excellent example of interagency coordination and cooperation.

Three junior colleges, Frank Phillips, Amarillo College and Clarendon Community College, offer technical training as well as preparatory courses for four-year institutions. In particular, Clarendon Community College provides a two-year ranch and feedlot operations program.



SIGNIFICANCE OF THE FINDINGS

The development of the feedlot industry in the Texas High Plains has led it to become one of the most significant agricultural regions in the world. A similar trend in the swine production coupled with a continuing dairy industry suggests agriculture will become even more important in the future. Production agriculture already contributes more than \$4.7 billion in value-added production to the trade area. The current cash and value-added sales represent a 27.4 percent increase over the previous four-year period (\$3.7 billion). The original \$4.7 billion cash receipts from farm and ranch production leads to a total region-level economic contribution of \$8.1 billion and leads to a larger state-level impact topping \$10.1 billion



Agribusiness in the private sector was estimated to employ 51,590 people of the private work force in the High Plains Trade Area with an associated payroll exceeding \$1.3 billion. In reality, employment is much greater in the agribusiness sector in the trade area. Data limitations result in the exclusion of private sector employees dealing with financing of agribusinesses like AgTexas and Panhandle-Plains Land Bank as well as other area lenders with significant ag portfolios. Also excluded are the public sector employees involved in agriculture such as Farm Service Agency, AgriLife Research and AgriLife Extension, and the Natural Resources Conservation Service, among other public entities.

Production agriculture in the High Plains Trade Area is a major component of Texas agriculture. Almost 25 percent of all cash receipts for crops and livestock in Texas come from the 26-county trade area. Production in the region accounts for 78.5 percent of the state's fed beef, 93.4 percent of the hogs, 40.4 percent of the dairy cows, 58 percent of the corn, 40.8 percent of the wheat, 20.3 percent of the sorghum and 63.3 percent of the ensilage.



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Sixth Edition By

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