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South Dakota Farmland Market Trends: 1991-2002

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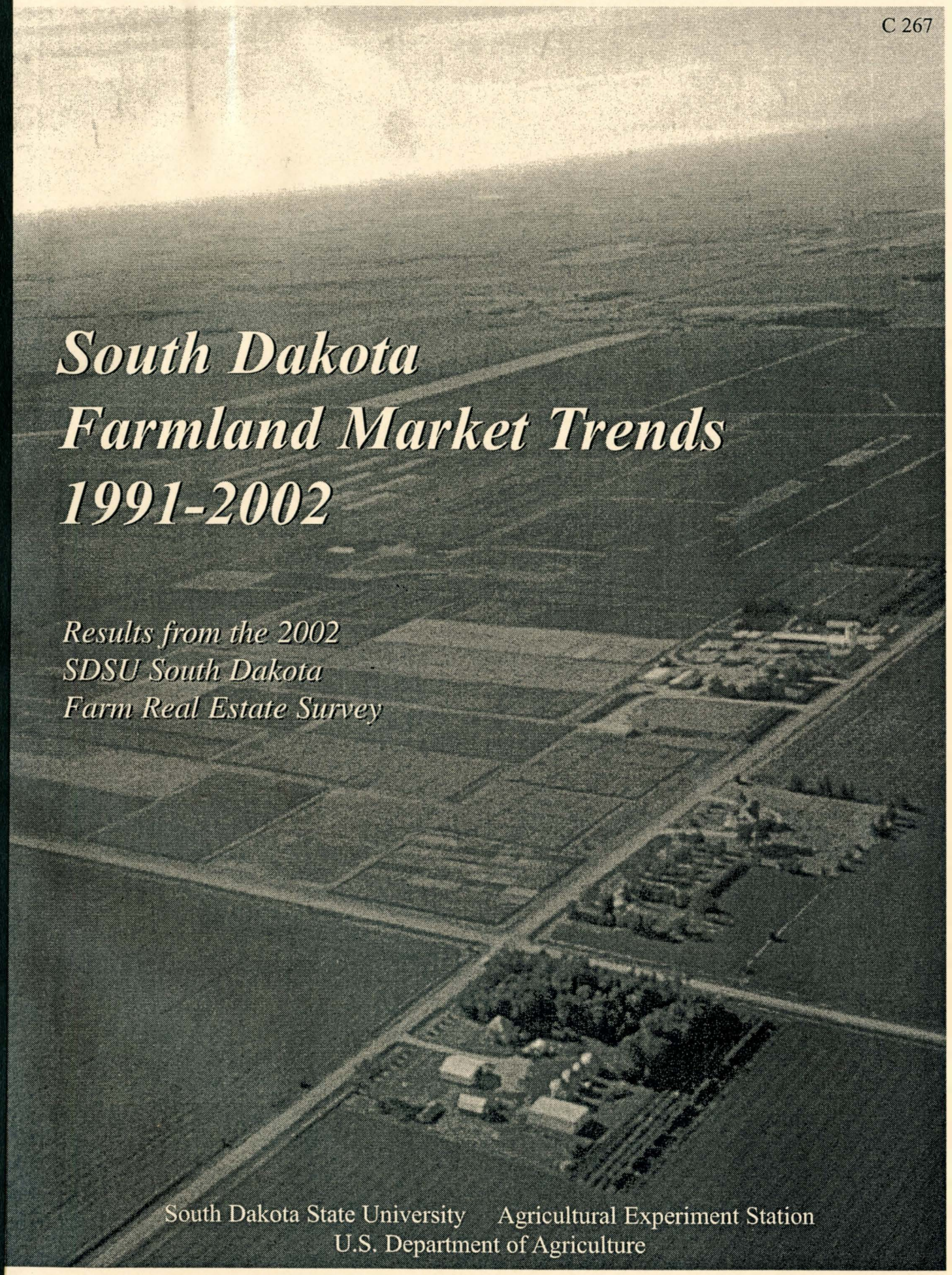

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Results from the 2002 SDSU South Dakota Farm Real Estate Survey

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SDSU AGRICULTURAL EXPERIMENT STATION CIRCULAR 267, MAY 2002

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Foreword

Agricultural land values and cash rental rates in South Dakota, by region and by state, are the primary topics of this report. The target audiences for this report are farmers and ranchers, landowners, agricultural professionals (lenders, rural appraisers, professional farm managers), and policy makers interested in agricultural land market trends. This report contains the results of the 2002 SDSU South Dakota Farm Real Estate Market Survey, the twelfth annual SDSU survey developed to estimate agricultural land values and cash rental rates by land use in different regions of South Dakota.

We wish to thank our reviewers for their constructive comments on an earlier draft of this report. The reviewers are Dr. Richard Shane, department head; Dr. Don Peterson, Extension farm management specialist, and Tonya Hansen, research associate of the SDSU Economics Department, and Mary Brashier, AgBio Communications, SDSU.

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General funding for this project is from the SDSU Agricultural Experiment Station project H - 127: Economic analyses of agricultural land markets and land management practices in South Dakota.

Finally, we wish to thank all of the 241 respondents who participated in the 2002 South Dakota Farm Real Estate Market Survey. Many have also participated in one or more past annual land market surveys. Without their responses, this report would not be possible.

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SOUTH DAKOTA FARMLAND MARKET TRENDS, 1991–2002:

RESULTS FROM THE 2002 SDSU SOUTH DAKOTA FARM REAL ESTATE SURVEY

Dr. Larry Janssen and Dr. Burton Pflueger[1]

SUMMARY

The 2002 SDSU Farm Real Estate Market Survey reports current agricultural land values and cash rental rates by land use in different regions of South Dakota and compares them with values of earlier years. Key findings are highlighted below.

The most recent annual change (2001 to 2002) in agricultural land values of 9.9% is similar to the 8.7% increase reported from 2000 to 2001 and is considerably above the average annual rate of increase of 5.7% from 1991 to 2002. This annual rate of increase is the second highest during the past 10 years. From 2001 to 2002, annual increases of 10% or more occurred in the south-central, north-central, east-central, central, and southwest regions of the state. More modest increases were noted in the southeast, northeast, and northwest regions.

Cash rental rates per acre for cropland increased in all regions from 2001 to 2002, while hayland and rangeland/ pasture cash rental rates increased in most regions. In general, cash rental rate increases were strongest in those regions where substantial land value increases were also reported. In other words, land values rapidly respond to increases in cash rental rates stemming from record crop yields, record farm program payments, and favorable calf prices. From 2001 to 2002, average cash rental increases for cropland ranged from $3.50 to $5.30 per acre in eastern and north-central regions of South Dakota.

Economic conditions in South Dakota agriculture are viewed as the major reasons for increases in land market values. For example, farmland values have increased more than the rate of general price inflation from 1991 to 2002 in all regions and for all land uses in South Dakota. Also, cash rental rate increases provide underlying support for increases in land values. These two basic economic factors attract interest in farmland purchases by investors and by farmers expanding their operation.

Land values and cash rental rates increased more rapidly from 1996 to 2002 than in the 1991–1996 period. For example, South Dakota cropland values increased 7.1% annually from 1996 to 2002, compared to 3.4% from 1991 to 1996. Similarly, South Dakota cropland cash rental rates increased an average of 6.1% annually from 1996 to 2002 compared to 1.9% from 1991 to 1996. This is directly related to governmental provisions, especially the crop subsidies and removal of planting restrictions of farm program legislation from 1996 to present. Lower interest rates and continued increases in crop yields are other important factors.

Agricultural land values differ greatly by region and land use. In each region, per-acre values are highest for irrigated land, followed in descending order by nonirrigated cropland, hayland or tame pasture, and native rangeland. For each land use, per-acre land values are highest in the southeast or east-central region and lowest in western South Dakota.

The average value of nonirrigated agricultural land (as of February 2002) in South Dakota is $410 per acre. Nonirrigated agricultural land varies from $923 per acre in the southeast to $147 per acre in the northwest. Average nonirrigated cropland values vary from $1057 per acre in the southeast to $524 per acre in the central region and $244 per acre in the northwest. This is the second year that average cropland values exceed $1000 per acre in any region. Average cropland values exceed $1350 per acre in several counties of eastern South Dakota. Average rangeland values vary from $538 per acre in the southeast to $127 per acre in the northwest. Within each region, land productivity and land use account for substantial differences in per-acre values.

[1] Professors of agricultural economics, Department of Economics, South Dakota State University. Dr. Janssen has teaching and research responsibilities in economic development, agricultural finance, and farmland markets. Dr. Pflueger is Extension farm financial management specialist and also teaches an undergraduate course on agricultural cooperatives.

Average cash rental rates differ greatly by region and land use. Average rental rates are highest in the southeast and east-central regions and lowest in western South Dakota. In each region, cash rental rates are highest for cropland and lowest for pasture and rangeland. For example, average cash rental rates in 2002 for nonirrigated cropland are $90 per acre in a few counties of southeastern South Dakota and only $20.40 per acre in western South Dakota. Average rangeland rental rates are slightly above $40 per acre in a few counties of southeastern South Dakota compared to an average of $7.20 per acre in northwest South Dakota.

Current average net rates of return on agricultural land in South Dakota remain considerably lower than farmland mortgage interest rates. However, the spread between mortgage interest rates and current net rates of return has narrowed this past year, due to overall declines in interest rates. Respondents' estimates of net rates of return to farmland in their locality, given current land values, were 4.5% for all agricultural land, 5.2% for nonirrigated cropland, and 3.9% for rangeland. This implies that relatively large down payments are necessary before land purchases can cash flow from net returns. Continued caution in farm real estate debt financing is essential.

Farm expansion continues as the major reason for purchasing farmland, while retirement from farming and settling estates have been the major reasons for selling farmland. In addition, investment potential and hunting/recreation demand for farmland have emerged as major reasons for purchase during the past 7 to 8 years. Favorable sellers' market conditions and the intent to realize capital gains compete with financial/cash flow pressure as other major reasons for selling farm/ranch land.

Federal farm programs, lower interest rates, and investor interest in farmland are listed as the major positive factors influencing farmland markets. Low crop prices continue as the main negative factor affecting farmland markets. Many respondents continue to cite the combination of low crop prices and record farm program payments as an unsound foundation for continued increases in cash rents and land values.

INTRODUCTION

The 2002 SDSU Farm Real Estate Market Survey is the twelfth annual survey of agricultural land values and cash rental rates by land use in different regions of South Dakota. We report on the results of the survey and also include a discussion of factors influencing buyer/seller decisions and positive/negative factors operating in the rural real estate market. Publication of survey findings is a response to numerous requests by farmland owners, renters, appraisers, lenders, potential buyers, and others for detailed information on farmland markets in South Dakota.

The 2002 estimates are based on reports from 241 respondents to the SDSU 2002 South Dakota Farm Real Estate Market Survey. Respondents are agricultural lenders, Farm Service Agency officials, rural appraisers, assessors, realtors, professional farm managers, and Extension agricultural educators. All are familiar with farmland market trends in their localities.

Copies of the SDSU Farm Real Estate Market survey, mailed in February and March 2002, requested information on cash rental rates and agricultural land values as of February 2002. Response rates, respondent characteristics, and estimation procedures are discussed in Appendix I.

Results are presented in a format similar to surveys published by Janssen and Pflueger from 1991 through 2001. Regional level information on land values and cash rents by land use (crop, hay, range, pasture, and irrigated crop/hay)[2] is emphasized in each of these SDSU reports. Current year findings are compared to those of earlier years. A new feature in this report is statewide estimates of cash rental rates by land use.

This report contains an overview of agricultural land values and cash rental rates across South Dakota. It may or may not reflect actual land values or cash rental rates unique to specific localities or specific properties. Use this information as a general reference, and rely on local sources for more specific details.

[2] A major purpose of this survey is to report land values and cash rental rates by major uses of privately owned agricultural land, excluding farm building sites. The major nonirrigated land uses reported are crops, hay, tame pasture, and range. Rangeland is native grass pasture while tame pasture is seeded to introduced grasses. Agricultural land typically used for production of alfalfa hay, other tame hay, or native hay is considered hayland in this report. Cropland is agricultural land typically used for crop production other than hay production. Since most irrigated land in South Dakota is used for crop or hay production, we report the value and rental rates of irrigated land used for these purposes. These major land uses comprise nearly 98% of privately owned land in farms in South Dakota (Janssen, 1999).

County data on whole farm, cropland, and pasture land rents and values are provided by the South Dakota Agricultural Statistics Service (SDASS) in the report: *South Dakota 2002 County Level Land Rents and Values*.[3] This SDASS report is based on a telephone survey of South Dakota farm/ranch producers and is the eighth annual survey of county level land rents and values. A comparison of methods and results from these two farmland market surveys (SDASS and SDSU) is available in Janssen, 1999.

CHANGING ECONOMIC CONDITIONS IN SOUTH DAKOTA AGRICULTURE

Most renters, buyers, and sellers of farmland are local area residents. Consequently, land market participants are heavily influenced by nearby social, financial, and economic factors. Many of the influential factors are related to changing economic conditions in agriculture. Land markets tend to reflect these changing economic conditions as land market participants adjust over time to current and prospective conditions.

Most of the 1990s were characterized by low inflation rates, declining to stable interest rates, and increasing export markets for grains, oilseeds, livestock, and meat products. The amount of farm debt gradually increased and interest expense averaged between 9 and 11% of South Dakota farm production expenses. Net farm income trended upward from 1990 to 1996 but has been lower since then. Average prices of the principal crops (feed grains, wheat, and soybeans) in the 1999 and 2000 marketing years were the lowest recorded in the past 10 years. However, cattle and calf prices rebounded in 1999 and 2000, resulting in improved profit margins.

Crop yields in the past 5 years have been considerably above long-term trends. However, the value of principal crop production decreased for all commodities, primarily due to price decreases. Increased yields buffered some of the impact of crop price declines. Nevertheless, the combined value of principal crops grown in South Dakota steadily from $2.87 billion in 1996 to $2.02 billion in 1999, $2.21 billion in 2000, and $2.16 billion in 2001.

Perhaps the most dramatic change in farm income composition has been the drastic increase in direct federal government payments to farmers and their landlords. Federal farm program payments increased from $230 million to $268 million annually in the 1995–1997 period to nearly $430 million in 1998 and more than $700 million in 1999 and 2000. Direct government payments[4] increased from an average of 5–6.5% of gross farm income in South Dakota from 1995 to 1997 to more than 15% of gross farm income in 1999 and 2000.

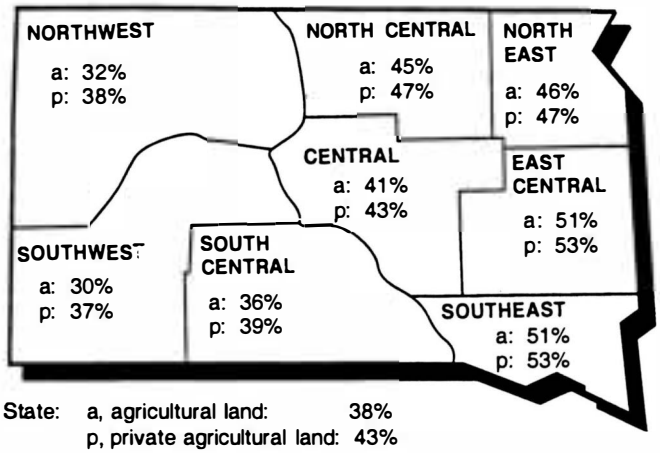
Farm asset values, especially land values, have become dependent on government farm payments during periods of lower crop prices. A simple income-capitalization model for farm/ranch land suggests farmland values are a multiple of net cash returns to land. A reasonable approximation of net cash returns to land is net cash farm income received by farmers plus net rent received by nonoperator landlords. Direct government payments are a component of net cash returns to farmland and have increased in relative importance. For example, the contribution of direct government payments to net cash farm income received by farmers and nonoperator landlords varied from an average of 8% to 15% during the 1995–1997 period to more than 30% in 1999 and 2000. This provides an upper bound estimate of the dependence of current farmland values on continued government payments.

Of course not all changes in net cash returns to land are capitalized into land value increases or decreases. Expectations about future net cash returns are also important determinants of land values and depend on other factors than recent changes in net cash returns to land or current dependence of net cash returns on direct government payments. Nevertheless, there is a direct and powerful relationship between land values and net cash returns to land over time (Janssen, 1999).

[3] The SDASS report on county level rents and values can be obtained from the Sioux Falls office. The phone number is 605-330-4235 and the mailing address is South Dakota Agricultural Statistics Service, P.O. Box 5068, Sioux Falls SD, 57117-5068. The report can also be accessed via the internet at http://www.nass.usda.gov/sd/

[4] Direct government payments to agricultural producers include production flexibility contract payments, loan deficiency payments, and emergency assistance payments. Direct government payments to U.S. farmers increased from $7–8 billion each year from 1995 to 1997 to $22.1 billion in 2000 and a projected $14.1 billion in 2001. " In 2000, it is estimated that non-operator landlords received about 12% of loan deficiency payments and about 15% of all other direct government payments" (Morehart, Ryan, and Green. 2001. pp. 5).

Fig 1. Proportion of South Dakota all-agricultural (a) and private (p) leased farmland, statewide and regional, 2002.



State: a, agricultural land: 38%
p, private agricultural land: 43%

Source: Estimates from 1997 Census of Agriculture and other studies.

Land market trends usually lag behind changing conditions in the general and agricultural economy and are strongly influenced by land market participants' expectations of future trends and the availability of debt or equity financing for land-related purposes.

The strong employment base in many South Dakota trade centers provides off-farm employment for increasing numbers of South Dakota farm families. This permits greater economic stability and opportunities for many persons involved in land market decisions. Many investors, including farmland owners, have received capital gains from sale of stocks, land, or other investments that can be used for purchasing agricultural land for a variety of purposes. Credit has been readily available in recent years to help finance land purchases and finance farm operating expenses.

Based on data from the 1997 Census of Agriculture, 38% of South Dakota's agricultural land acres are in a cash lease or share lease from private landowners or in a per-acre cash lease from state, tribal, or federal agencies. The proportion of leased agricultural land varies from nearly 51% of farmland acres in the east-central and southeast regions to 41% in the central region and 30% in the southwest region (Fig 1). However, not included are several million acres of rangeland, primarily west of the Missouri River, leased on a per-animal unit or perhead basis in federal or tribal grazing permits.

In this report, we mostly focus on per-acre land values and cash rental rates for privately owned agricultural land in South Dakota, excluding more than five million acres of agricultural land owned by federal, state, and tribal agencies. Our estimate of acres leased from private landowners is nearly 43% of South Dakota's privately owned agricultural land, varying from about 37% to 39% in regions west of the Missouri River to nearly 53% of farmland in the east-central and southeast regions (Fig 1).

SOUTH DAKOTA AGRICULTURAL LAND VALUES, 2002

Respondents to the 2002 South Dakota Farm Real Estate Market Survey estimated the per-acre value of nonirrigated cropland, hayland, rangeland, tame pastureland, and irrigated land in their county and the percent change in value from one year earlier. Responses for nonirrigated land uses are grouped into eight agricultural regions (Fig 1). The six regions in eastern and central South Dakota correspond with USDA Agricultural Statistics Districts. In western South Dakota, farmland values and cash rental rates are reported for the northwest and southwest regions. Due to the small number of irrigated land reports in several regions, responses for irrigated land values and rental rates are regrouped into six regions: western, central/south-central, north-central, northeast, east-central, and southeast.

The average value per acre and percent change in value was obtained for each agricultural land use in each region. Regional and statewide all-land (nonirrigated land) value estimates are weighted averages based on the relative acreage and value of each nonirrigated agricultural land use in each region of South Dakota (Appendix I).

As of February 2002, the average value of all-agricultural land in South Dakota was $410 per acre, an estimated 9.9% increase from one year earlier and considerably above the 5.7% annual rate of increase from 1991 to 2002 (Fig 2 and Table 1[5]). The increase in value by $37 per acre is the highest annual increase in value over the past 11 years, and the annual percentage rate of increase was second only to the 10% rate of increase from 1997 to 1998.

[5] Data shown in Tables 1, 1A,3, and 3A of this report are per-acre land values or cash rental rates for the three most recent years (2002, 2001, and 2000) and two earlier years of 1996 and 1991. These same tables with data shown for all twelve years (1991 – 2002) are available at http://agbiopubs.sdstate.edu/articles/C267.pdf

Table 1. Average reported value and annual percentage change in value of South Dakota agricultural land by type of land by region, 1991-2002.

Type of Land	South-east	East-Central	North-east	North-Central	Central	South-Central	South-west	North-west	STATE
					dollars per acre				
All Agricultural Land (nonirrigated)									
Average value, 2002	923	876	567	494	413	313	201	147	410
Average value, 2001	884	784	526	445	364	284	165	141	373
Average value, 2000	788	675	499	400	343	286	166	128	343
Average value, 1996	636	522	419	291	288	217	124	112	273
Average value, 1991	526	466	362	227	225	177	97	84	223
Av annual % change 02/91	5.2%	5.9%	4.2%	7.3%	5.7%	5.3%	6.8%	5.2%	5.7%
Annual % change 02/01	4.4%	11.7%	7.8%	11.0%	13.5%	10.2%	21.8%	4.3%	9.9%
Nonirrigated Cropland									
Average value, 2002	1057	1019	691	665	524	445	311	244	687
Average value, 2001	1023	911	652	592	456	423	245	223	628
Average value, 2000	910	785	620	520	436	417	248	208	570
Average value, 1996	751	613	514	372	371	317	214	191	456
Average value, 1991	623	554	450	294	300	272	185	153	386
Av annual % change 02/91	4.9%	5.7%	4.0%	7.7%	5.2%	4.6%	4.8%	4.3%	5.4%
Annual % change 02/01	3.3%	11.9%	6.0%	12.3%	14.9%	5.2%	26.9%	9.4%	9.4%
Rangeland (native)									
Average value, 2002	538	543	353	297	325	260	172	127	215
Average value, 2001	488	478	315	270	284	232	143	124	193
Average value, 2000	456	417	297	253	265	235	143	111	183
Average value, 1996	336	311	250	194	214	177	100	97	143
Average value, 1991	268	271	205	147	163	137	74	69	109
Av annual % change 02/91	6.5%	6.5%	5.1%	6.6%	6.5%	6.0%	8.0%	5.7%	6.4%
Annual % change 02/01	10.2%	13.6%	12.1%	10.0%	14.4%	12.1%	20.3%	2.4%	11.4%
Pasture (tame, improved)									
Average value, 2002	639	607	391	327	345	287	193	156	389
Average value, 2001	564	522	342	301	332	258	176	153	350
Average value, 2000	516	481	334	289	303	268	167	144	329
Average value, 1996	379	358	279	231	258	188	127	115	256
Average value, 1991	315	325	252	170	199	163	92	94	206
Av annual % change 02/91	6.6%	5.8%	4.1%	6.1%	5.1%	5.3%	7.0%	4.7%	5.9%
Annual % change 02/01	13.3%	16.3%	14.3%	8.6%	3.9%	11.2%	9.7%	2.0%	11.1%
Hayland									
Average value, 2002	863	770	412	352	375	325	238	204	397
Average value, 2001	844	735	359	332	337	281	201	181	364
Average value, 2000	722	577	330	317	310	293	203	175	332
Average value, 1996	568	451	314	219	273	232	156	146	267
Average value, 1991	461	358	252	169	190	197	126	122	211
Av annual % change 02/91	5.9%	7.2%	4.6%	6.9%	6.4%	4.7%	6.0%	4.8%	5.9%
Annual % change 02/01	2.3%	4.8%	14.8%	6.0%	11.3%	15.7%	18.4%	12.7%	9.1%

Source: 2002 and earlier South Dakota Farm Real Estate Market Surveys

Table 1a. Average reported value and annual percentage change in value of South Dakota irrigated land by region, 1991-2002.

Type of Land	South-east	East Central	North-east	North Central	Central/ South-Central	Western	STATE
				dollars per acre			
Irrigated land							
Average value, 2002	1613	1228	935	690	639	568	916
High Productivity	1823	1465	1115	790	725	768	—
Low Productivity	1201	876	817	600	489	407	—
Average value, 2001	1425	1069	863	687	630	576	856
Average value, 2000	1358	1036	802	619	593	575	816
Average value, 1996	1083	714	662	504	460	453	642
Average value, 1991	942	665	563	433	460	419	580
Av annual % change 02/91	5.0%	5.7%	4.7%	4.3%	3.0%	2.8%	4.2%
Annual % change 02/01	13.2%	14.9%	8.3%	0.4%	1.4%	-1.4%	7.0%

Source: 2002 and earlier South Dakota Farm Real Estate Market Surveys

Regional differences in all-agricultural land values are primarily related to major differences in: (1) agricultural land productivity among regions, (2) per-acre values of cropland and rangeland in each region, and (3) the proportion of cropland and rangeland in each region. Native rangeland is the dominant land use in western South Dakota, while most agricultural land in eastern South Dakota is nonirrigated cropland. Regional trends in all-agricultural land values, cropland values, and rangeland values from 1991–2002 are displayed in figures 3, 5, and 7.

The all-land average values are highest in the southeast and east-central regions, with per-acre values ranging from $923 in the southeast to $876 in the east-central region. These two eastern regions contain the most productive land in South Dakota. Cropland and hayland are the dominant uses in each region, comprising 73% and 76% of farmland acres in the east-central and southeast regions, respectively.

Agricultural land values in northeast and north-central South Dakota are considerably lower than in the east-central and southeast regions. Average per-acre values were $567 per acre in the northeast region and $494 per acre in the north-central region. Geographic location and land use differences are closely related to differences in reported value. Crop/hay comprises 71% of farmland acres in the northeast region, compared to 62% of farmland acres in the north-central region.

Agricultural land values and land use in the central region closely reflect statewide averages. As of February 2002, the average value of all agricultural land was $413 per acre in the central region, compared to $410 per acre statewide. Crop/hay use is 52% of private agricultural land acres in the central region, compared to 45% for all of South Dakota.

Agricultural land values are much lower in regions west of the Missouri River. The average value per acre ranges from $313 in the south-central region to $201 and $147 in the southwest and northwest regions. Rangeland and pasture are the dominant uses in both regions, varying from 65% of privately owned agricultural land acres in the south-central region to 77% (81%) of private farm/ranch land in the southwest (northwest) region.

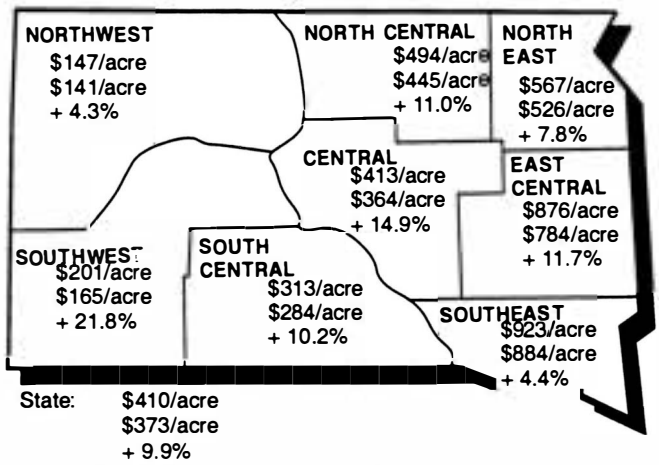
LAND VALUES BY TYPE OF LAND AND REGION

In each region, per-acre values are highest for irrigated land followed by nonirrigated cropland, hayland or tame pasture, and native rangeland. For each nonirrigated land use, per-acre land values are highest in the southeast and east-central regions and

lowest in the northwest and southwest regions (Fig 4, 5, 6, and 7; Tables 1 and 1A). These regional differences in land values by land use have remained consistent over time and are closely related to climate patterns, crop/forage yields, and soil productivity differences across the state.

A major finding is that per-acre values of nonirrigated cropland, rangeland, tame pasture, and hayland have increased from 2001 to 2002 in all regions of South Dakota. This is the first time in the 12-year history of the SDSU survey that per-acre land values in all agricultural land uses increased from the previous year in all South Dakota regions. Furthermore, per-acre values of cropland and rangeland have also increased from 2001 to 2002 in all county clusters, while per-acre values of tame pasture and hay land have increased in all but a few county clusters.

Fig 2. Average value of South Dakota agricultural land, February 1, 2002 and 2001, and percent change from one year ago.



Regional and statewide average values of agricultural land are the weighted averages of dollar value per acre and percent change by proportion of acres of each nonirrigated land use by region.

Top: Average per-acre value—February 1, 2002
Middle: Average per-acre value—February 1, 2001
Bottom: Annual percent change in per-acre land value

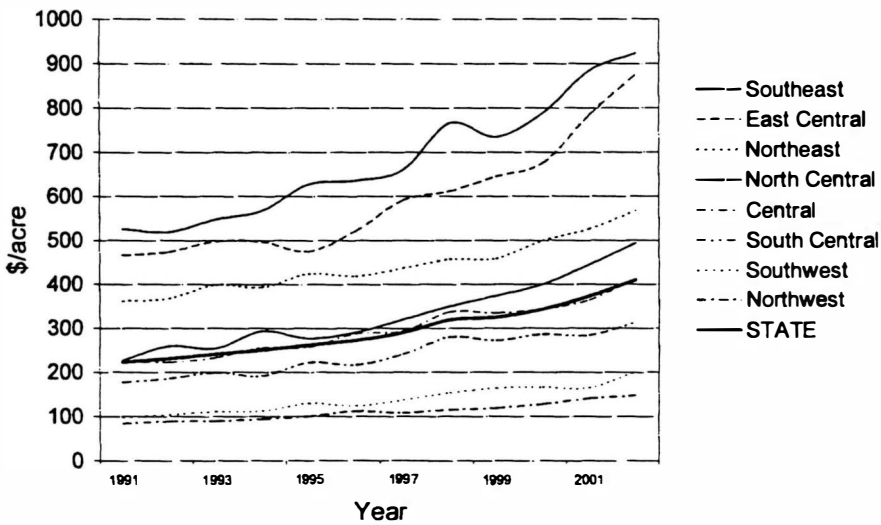
Source: 2002 South Dakota Farm Real Estate Market Survey, SDSU.

Cropland Values

The weighted average value of South Dakota's non-irrigated cropland (as of February 2002) is $687, a 9.4% increase from 2001 (Table 1). This is directly related to excellent crop yields and substantial federal crop program payments that offset the negative impacts of poor crop prices in the past few years.

There is considerable regional variation in cropland value changes from the previous year. For example, cropland values increased about 12% in the east-central and north-central regions, nearly 15% in the central region, and more than 25% in the southwest region. Cropland values increased from 3.3% to 6.0% in other regions.

Fig 3. All ag-land value, statewide and regions, 1991-2002.

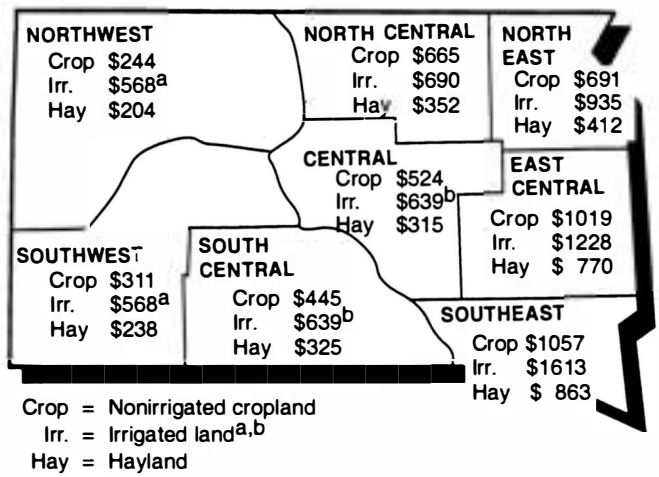


The southeast and east-central regions have the highest average cropland values of $1057 and $1019 per acre, respectively. This is the first time in 12 years of data that regional average cropland values exceed $1000 per acre in both the southeast and east-central regions. (Fig 4, Fig 5, and Table 1). These two eastern regions contain 30% of South Dakota cropland. Corn and soybeans are the major crops in most counties of both regions.

Corn, soybeans, wheat, and other small grains are the predominant cropland uses in most counties of the northeast and north-central regions of South Dakota. These two regions contain 34% of state cropland acres. Average cropland values in the northeast ($691 per acre) are higher than in the north-central ($665 per acre) region. Statewide cropland values are between average cropland values reported in these two regions.

As of February 2002, cropland values averaged $524 per acre in the central and $445 per acre in the south-central region. The lowest cropland values, $244 and $311 per acre, are found in the

Fig 4. Average value of South Dakota cropland, irrigated land, and hayland, by region, February 2002, dollars per acre.

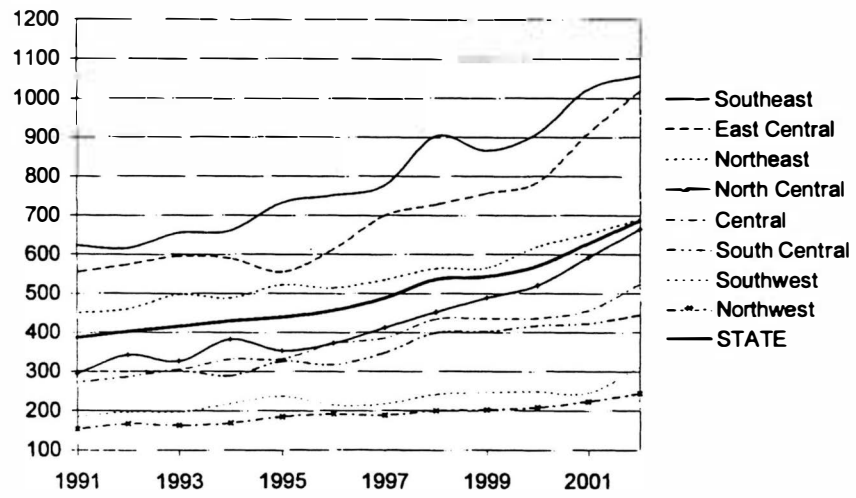


Crop = Nonirrigated cropland
Irr. = Irrigated land[a,b]
Hay = Hayland

[a]Irrigated land values shown for the northwest and southwest regions are based on the average value reported for gravity irrigated land in both western areas.
[b]Irrigated land values shown for the central and south-central regions are based on the average value reported in both regions.

Source: 2002 South Dakota Farm Real Estate Market Survey, SDSU.

Fig 5. Cropland value, statewide and regions, 1991-2002.



northwest and southwest regions, respectively (Table 1). Wheat is the dominant cropland use in the western regions, while wheat, corn, and grain sorghum are important crops in the south-central region. Wheat, corn, soybeans, and sunflowers are the major cropland uses in the central region.

Hayland Values

South Dakota hayland values averaged $397 per acre as of February 2002, a 9.1% increase from one year earlier. Increased hayland values are reported in all regions. Strong annual increases in hayland values varying from 12.7% to 18.4% are reported in the northwest, northeast, south-central, and southwest regions.

Per-acre hayland values follow a similar regional pattern as cropland values, with the highest hayland values reported in the southeast ($863 per acre) and the lowest in the northwest ($204 per acre). Hayland values are clustered between $325 and $412 per acre in the south-central, central, north-central and northeast regions. Alfalfa hay is the most common type of hay harvested in eastern South Dakota, while native hay is more common in central and western South Dakota.

Pasture and Rangeland Values

In February 2002, the value of South Dakota native rangeland averaged $215 per acre, while the average value of tame pasture was $389 per acre (Table 1, Figs 6 and 7). Native rangeland is much more concentrated in the western and central regions of South Dakota, while tame pasture is concentrated in the eastern regions.

Statewide average rangeland and tame pasture values increased 11.4% and 11.1%, respectively, during the past year (February 2001 to February 2002). Based on survey reports, double digit (>10%) rangeland value increases occurred in all regions of South Dakota except the northwest with a 2.4% annual increase. Tame (improved) pastureland value increases were above the statewide average of 11.1% in the south-central region and in all eastern regions.

Average rangeland values are highest in the east-central and southeast regions ($538 and $543 per acre) and lowest in the southwest ($172 per acre) and northwest ($127 per acre). In the other regions, average rangeland values vary from $260 per acre

in the south-central to $353 per acre in the northeast (Table 1 and Fig 6). Across regions, average values of tame pasture varied from 10% to 23% higher than average value of rangeland.

In the cropland-intensive regions of eastern South Dakota and in the north-central region, the average per-acre value of nonirrigated cropland varies from 1.86 to 2.25 times the average value of native rangeland. In the more rangeland-intensive central and western regions, the average per-acre value of cropland varies from 1.61 to 1.81 times the rangeland value. In all regions, tame (improved) pasture values are between rangeland and hayland values. Pasture and hayland values are considerably lower than cropland values.

Regional variations in rangeland and cropland values are lower than reported for all-agricultural land values. In 2002, average per-acre values of rangeland and cropland in the northwest region are about 23% of those in the southeast region. However, due to the changing proportion of crop/hay and pasture/rangeland across the state, the average value of all-agricultural land in the northwest is only 16% of all agricultural-land values in the southeast (Table 1).

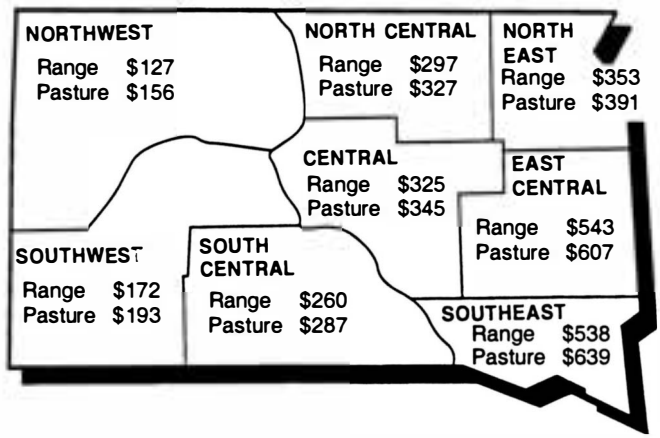
Irrigated Land Values

Irrigated land value reports are consolidated into six regions (Table 1A and Fig 4). Very few irrigated land reports from the central and south-central regions make it necessary to combine the reports from these two regions. The northwest and southwest regions are combined into a western region because almost all irrigated land reports are for gravity-irrigated cropland in counties adjacent to the Black Hills. In all other regions, the value of irrigated land was reported for center pivot irrigation systems, excluding the value of the center pivot.

We continue to caution readers that irrigated land value data are less reliable than data reported for other agricultural land uses. Irrigated land is not common (less than 1% of total acres) in most regions, and there are few sales of irrigated land tracts. Consequently, only 34% of all respondents were familiar with and able to provide information on irrigated land values.

Based on only 82 responses, irrigated land value increases were reported in all except the western region. Statewide average irrigated land values are $916 per acre, a 7.0% increase from a year earlier. Regional average irrigated land values are above the statewide average in the southeast ($1613 per acre) and east-central ($1228 per acre) regions and are close to the state average in the northeast ($935 per acre). In the western and central regions of South Dakota, irrigated land values average $568 to $690 per acre (Table 1A and Fig 4).

Fig 6. Average value of South Dakota rangeland and tame pasture, by region, February 2002, dollars per acre.



Source: 2002 South Dakota Farm Real Estate Market Survey, SDSU.

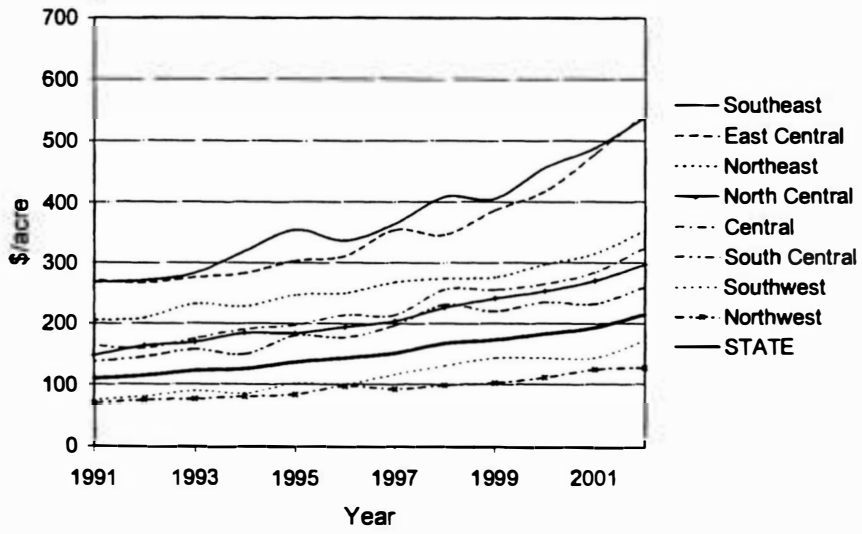
VARIATION IN LAND VALUES BY LAND PRODUCTIVITY AND COUNTY CLUSTERS

Within each region and for each nonirrigated agricultural land use, there is considerable variation in land values. In this section, we report the February 2002 per-acre values of average quality, high-productivity, and low-productivity land by agricultural land use by region and by county clusters within several regions (Table 2).

A county cluster is a group of counties within the same region that have similar agricultural land use and value characteristics. Three county clusters are identified in each of the following regions: southeast, east-central, northeast, north-central and central. Land values are not reported for county clusters in regions west of the Missouri River because there are too few reports from most county groupings. This survey is not designed to reflect the substantially higher nonirrigated land values near the Black Hills.

During the previous year (February 2001 to February 2002) per-acre average values of cropland and rangeland increased in all

Fig 7. Rangeland value, statewide and regions, 1991-2002.



regions and county clusters. Tame pasture and hayland values increased in all but a few county clusters east of the Missouri River. In some regions and county clusters, land values increased more than 15%.

Substantial variation in per-acre land value occurs by degree of land productivity for each land use in each region. For example, 2002 cropland values in the southeast region vary from an average of $823 per acre for low-productivity cropland to $1354 per acre for high-productivity cropland. In the northwest region, at the other extreme, the average value of low (high) productivity cropland values is $183 ($292) per acre. Across regions, average values of low-productivity cropland were 50% to 64% of the average values of high-productivity cropland.

Rangeland values in the southeast region vary from $424 per acre for lower-productivity rangeland to $643 per acre for higher productivity rangeland. In the northwest region, at the other extreme, the average value of low (high) productivity rangeland is $100 ($161) per acre. The average value of low-productivity rangeland varies from 60% to 68% of the average value of high-productivity rangeland (Table 2).

Average values of nonirrigated cropland exceed $1350 per acre in two county clusters in eastern South Dakota: Minnehaha-Moody ($1452 per acre) and Clay-Lincoln-Turner-Union ($1363 per acre). This is the sixth consecutive year that the average value of nonirrigated cropland exceeds $1000 in any county cluster. For comparison purposes, 1991 average values in these two county clusters were $809 to $811 per cropland acre.

Average land values are considerably lower in the other county clusters of the southeast and east-central region. For example, the per-acre value of average quality nonirrigated cropland is $918 in the Bon Homme-Hutchinson-Yankton county clusters and $645 per-acre in the Charles Mix-Douglas county cluster. Similar patterns of per-acre values occur for other land uses (Table 2). The greatest percentage and dollars per-acre increases for all land uses occurred in the Brookings-Lake-McCook county cluster.

In the northeast region, the average values of all agricultural land uses were highest in the Codington-Deuel-Hamlin county cluster and lowest in the Clark-Day-Marshall county cluster. Average land values vary from $755 per cropland acre to $395 per rangeland acre in the Codington-Deuel-Hamlin cluster, while average land values are $591 per cropland acre and $321 per rangeland acre in the Clark-Day-Marshall county cluster.
In the north-central region, average land values in Brown and Spink counties are much higher than those found in other counties, especially for cropland. Most land in Brown and Spink counties is located in the James River valley and is considered the most productive land in this region. As an example, nonirrigated cropland values averaged $918 per acre in the Brown-Spink county cluster compared to only $443 per acre in the Campbell-Potter-Walworth county cluster—a $475 per-acre difference. However, average values of rangeland, tame pasture, and hayland in the Brown-Spink county cluster are only $125 to $165 higher than per-acre values found in the same county cluster.

In the central region, land values increased more in the Aurora-Beadle-Jerauld county cluster than in the other county clusters. Average per-acre cropland values are fairly similar across all three county clusters, while rangeland, tame pasture, and hayland values are much higher in the Aurora-Beadle-Jerauld county cluster than in the other two county clusters. In this region, per-acre land values vary from an average of $245 for rangeland in the Hughes-Sully county cluster to $566 for cropland in the Aurora-Beadle-Jerauld county cluster.

During the past 3 years (February1999 to February 2002), cropland values have soared in several county clusters. Cropland values increased more than 36% in the Brookings-Lake-McCook,

Table 2. Average reported value per acre of agricultural land by South Dakota region, county clusters, type of land, and land productivity, February 1, 2002.

Agricultural Land Type and Productivity	Southeast				East Central			
	All	Clay Lincoln Turner Union	Bon Homme Hutchinson Yankton	Charles Mix Douglas	All	Minnehaha Moody	Brookings Lake McCook	Sanborn Davison Hanson Kingsbury Miner
	dollars per acre							
Nonirrigated Cropland								
Average	1057	1363	918	645	1019	1452	1073	741
High Productivity	1354	1682	1311	735	1283	1890	1408	862
Low Productivity	823	1044	715	538	784	1068	813	607
Rangeland (native)								
Average	538	618	513	460	543	675	550	494
High Productivity	643	734	641	516	625	796	659	549
Low Productivity	424	479	408	366	428	571	400	392
Pastureland (tame, improved)								
Average	639	717	582	529	607	768	629	538
High Productivity	757	857	697	588	718	979	757	603
Low Productivity	528	589	471	469	506	696	486	444
Hayland								
Average	863	1056	761	571	770	1275	719	575
High Productivity	1019	1230	943	630	903	1571	856	634
Low Productivity	650	784	566	474	610	986	574	454

Source: 2002 South Dakota Farm Real Estate Market Survey, SDSU
Irrigation land values are not reported in this table, due to insufficient number of reports in most county clusters

Brown-Spink, and Sanborn-Davison-Hanson-Kingsbury-Miner county clusters. During this same period, cropland values increased between 13% and 25% in most other county clusters.

For regions west of the Missouri River, average land values for each land use are highest in the south-central region and lowest in the northwest region. During the past year, increases in cropland and rangeland values were very strong (>+20%) in the southwest region, compared to rates of increase similar to or below the statewide average in the other regions.

LONGER TERM CHANGES IN FARMLAND VALUES, 1991—2002

Longer-term trends (1991—2002) in agricultural land values show increases above the rate of price inflation in all regions. The statewide average annual rate of increase for all-agricultural land was 5.7% during this 11-year period. Five regions, the southeast, east-central, central, south-central, and northwest, showed annual average rates of increase varying from 5.2% to 5.9%, similar to the statewide average.

From 1991—2002, the average annual rate of increase in South Dakota agricultural land values was greatest in the north-central region (+7.3%) and least in the northeast at only 4.3%. Throughout the 1990s much of the northeast region was adversely affected by wet weather that drastically raised water tables and made it very difficult or impossible to farm some cropland, reducing rates of increase in farmland values. However, increased rainfall and a major expansion of soybean production in the north-central region have also contributed to more rapid increases in agricultural land values, especially in the James River valley.

Total percentage change in all-agricultural land values from 1991—2002 varied from increases of 57% in the northeast

Table 2. Continued.

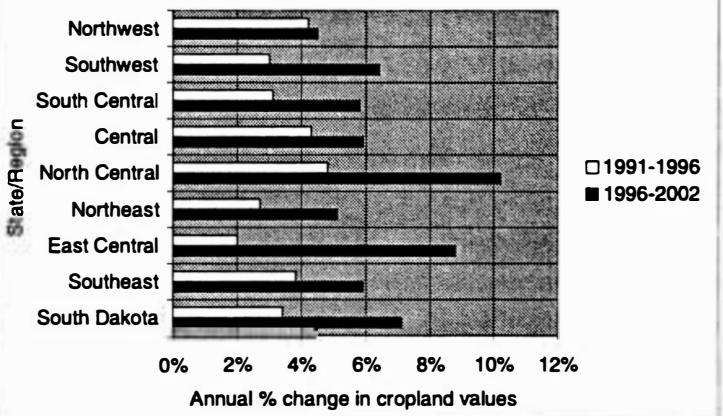
Agricultural Land Type and Productivity	Northeast All	Codington Deuel Hamlin	Grant Roberts	Clark Day Marshall	North Central All	Brown Spink	Edmund Faulk McPherson	Campbell Potter Walworth
				dollars per acre				
Nonirrigated Cropland								
Average	691	755	709	591	665	918	416	443
High Productivity	984	1017	1009	916	889	1269	502	570
Low Productivity	495	567	450	438	448	569	321	349
Rangeland (native)								
Average	353	395	338	321	297	348	270	223
High Productivity	415	435	397	410	353	413	303	288
Low Productivity	273	325	260	227	240	288	216	168
Pastureland (tame,improved)								
Average	391	428	396	354	327	386	293	221
High Productivity	458	471	438	459	382	455	332	269
Low Productivity	303	350	317	255	279	325	261	181
Hayland								
Average	412	460	382	340	352	408	324	264
High Productivity	497	577	444	382	409	471	379	308
Low Productivity	307	366	263	236	283	327	267	205

Agricultural Land Type and Productivity	Central All	Aurora Beadle Jerauld	Buffalo Brule Hand Hyde	Hughes Sully	South Central All	South West All	North West All
				dollars per acre			
Nonirrigated Cropland							
Average	524	566	489	506	445	311	243
High Productivity	639	624	686	595	549	377	292
Low Productivity	409	450	350	425	338	227	183
Rangeland (native)							
Average	325	418	289	245	260	172	127
High Productivity	414	486	358	390	320	216	161
Low Productivity	256	349	206	195	201	113	100
Pastureland (tame,improved)							
Average	345	419	329	275	287	193	156
High Productivity	432	514	431	331	338	239	196
Low Productivity	265	356	221	219	239	140	127
Hayland							
Average	375	420	368	283	325	238	204
High Productivity	428	471	430	325	388	280	235
Low Productivity	281	349	247	192	249	174	155

region to 84% in the central region and statewide and 118% in the north-central region.

Trends in land value changes from 1991 to 2002 by land use followed similar patterns as per-acre changes in all-agricultural land values. Except in the north-central region, annual percentage changes in cropland values were lower than annual percentage changes in rangeland values. In the central region and in all eastern regions of South Dakota, annual cropland value increases averaged 0.2%–0.5% lower than all-agricultural land value increases while annual rangeland values increased 0.6% to 1.3% higher than annual rates of increases for all land values.

Fig 8. Annual percentage change in cropland values, 1991-1996 and 1996-2002.



During the period from 1991 to 2002, statewide hayland and tame pasture values increased at an average annual rate of 5.9%. During this 11-year period, the strongest rates of increases for hayland were in the east-central, north-central, and central regions while the highest rates of increases in tame pasture were in the southwest, southeast, and north-central regions. For both land uses, the lowest rates of increases were in the northeast and northwest regions.

Considerable insight about the impact of federal agricultural policy on land values can be gained by examining annual rates of land value increases from February 1991 to February 1996 compared to increases from February 1996 to February 2002. The latter period should reflect the impacts of the 1996 farm bill and subsequent increases in federal agricultural spending for crop subsidies. It should also show the impacts of generally lower interest rates and more favorable credit terms than found in the earlier time period.

Cropland values increased considerably more statewide (7.1% vs. 3.4% annual rates of increase) from 1996 to 2002 than in the 1991—1996 period, even though crop prices were generally higher in the earlier period. The same pattern of substantially higher increases in cropland values was repeated in all regions except in the northwest (Fig 8). A similar pattern of higher rates of land value increases from 1996 to 2002, compared to the earlier period, is also shown in most regions for rangeland, tame pasture, and hayland (Table 1).

MAJOR REASONS FOR PURCHASE AND SALE OF FARMLAND

During each of the 12 years of this survey, respondents have been asked to provide major reasons for buying and selling farmland in their locality. Almost 95% of respondents provided one or two reasons in each category. During the 12 years the SDSU Farm Real Estate Market Survey has been conducted, the top three or four most commonly cited reasons for purchase or sale of farmland have not changed. However, relative importance of the factors has changed.

Farm expansion continues as the most common reason (35% of responses) given for purchasing farmland. Investment potential of farmland and hunting/recreation demand were the next most common reasons (Fig 9). During the past 8 years, an increasing number of respondents cited investment purposes and hunting/recreation purposes as major reasons for purchasing farmland, while fewer respondents are reporting farm production- related reasons for purchasing farmland. For example, 23% of 1994 responses indicated investment or hunting/recreation reasons for purchase compared to 37% of responses in 2002. The impacts of out-of-state buyers on farmland purchases are often cited in recent surveys and were rarely mentioned in the early 1990s.

Other major reasons for farmland purchases were related to farm expansion decisions such as location of tract, availability of land

Fig 9. Resons for buying farmland.

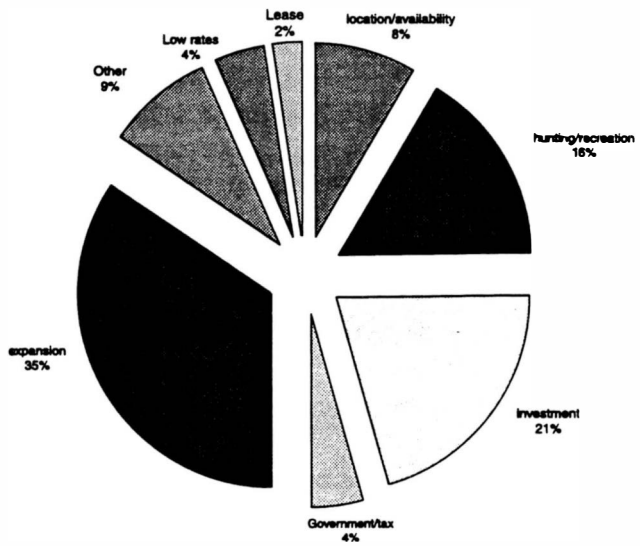
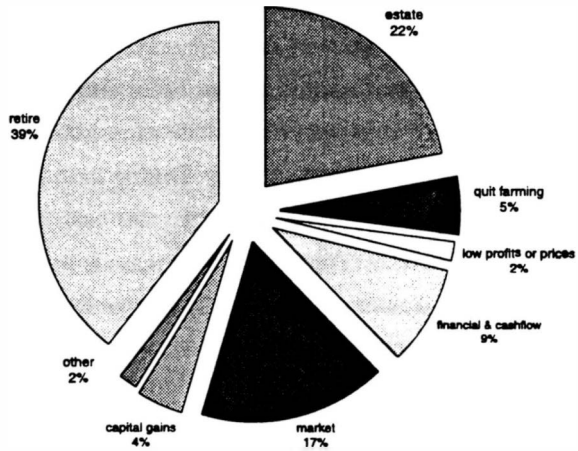


Fig 10. Reasons for selling farmland.



in local area, and sale of leased land to a former tenant. Government farm programs and tax-related reasons were also motivating factors for land purchases. Other respondents cited continued high crop yields and impacts of biotechnology on crop production as added reasons for land purchases.

Retirement from farming and estate settlements continue as the most common reasons given for selling farmland (Fig 10). Favorable market conditions for selling farmland and/or a desire to reap capital gains from selling farmland were cited more often since 2000 than during the 1990s. Financial/cash flow pressures, liquidation, or poor profit/rate of return prospects were other common reasons (11% of responses) for selling. This year there were fewer respondents citing financial difficulty reasons compared to the previous 3 years.

2002 CASH RENTAL RATES OF SOUTH DAKOTA AGRICULTURAL LAND

The cash rental market provides important information on returns to agricultural land. Three fourths of South Dakota farmland renters are involved in one or more cash leases for agricultural land. A majority of cash leases are annual renewable agreements (South Dakota 1997 Census of Agriculture; Xu, 2002).

Respondents were asked about average cash rental rates per acre for nonirrigated cropland, irrigated land, and hayland. Cash rental rates for pasture/rangeland were provided on a per-acre basis and, if possible, on a per-AUM (Animal Unit Month) basis.[6] Respondents were also asked to report cash rental rates for high-productivity and low-productivity land by different land uses in their locality. Cash rental rates by land use by region are summarized in Tables 3 and 3A and Figures 11 and 12. The same information is summarized by region and county cluster in Table 4.

Cash rental rates differ greatly by region and land use. For nonirrigated land uses, cash rental rates are highest in the southeast and east-central regions and lowest in the northwest and southwest. In every region, cash rental rates are highest for cropland and lowest for rangeland and pasture (Table 3, Figures 11 and 12). Large increases in cropland cash rental rates for 2002 are reported in all regions east of the Missouri River. Strong increases in hayland cash rental rates are also reported in the east-central, southeast, and central regions, while rangeland cash rents increased considerably in the east-central and central regions. In general, cash rental rate increases were strongest in the same regions where substantial land value increases were also reported. In other words, land value increases quickly reflect increases in cash rental rates. In turn, strong increases in cropland cash rental rates in the corn-soybean and corn-wheat-soybean areas of eastern and central South Dakota reflect the influence of record federal farm program payments and record crop yields.

[6] Animal Unit Month (AUM) is defined as the amount of forage required to maintain a mature cow with calf for 30 days. An AUM is somewhat of a "generic" value and should be about equal across regions. Therefore, private cash lease rates quoted on a per-AUM basis should be roughly equivalent in different geographic areas of the state unless there are major differences in forage availability, forage quality, and demand for leased land.

Table 3. Reported cash rental rates of South Dakota agricultural land by type of region, 1991-2001.

Type of Land	South-east	East Central	North-east	North-Central	Central	South-Central	South-west	North-west	State
				dollars per acre					
Nonirrigated Cropland									
Average 2002 rate	76.50	69.80	57.50	42.20	35.95	29.40	22.60	20.40	51.10
High Productivity	104.20	97.00	79.40	58.30	51.50	41.20	30.50	27.40	
Low Productivity	55.10	49.20	40.10	29.50	24.10	20.40	17.20	13.30	
Average 2001 rate	72.95	64.60	52.20	37.80	35.30	27.20	20.10	17.50	47.35
Average 2000 rate	67.50	56.40	49.30	36.20	31.90	30.00	18.70	18.70	44.00
Average 1996 rate	54.70	45.30	41.50	28.70	26.30	21.60	17.00	16.00	35.75
Average 1991 rate	49.30	43.20	38.50	24.50	23.20	22.20	15.90	13.50	32.60
Hayland									
Average 2002 rate	63.70	49.20	31.00	23.40	21.10	20.40	15.50	17.50	28.70
High Productivity	79.80	64.70	41.30	29.80	28.60	27.25	19.20	24.30	
Low Productivity	48.70	34.70	21.50	18.00	13.90	14.60	11.40	11.30	
Average 2001 rate	61.20	47.60	28.90	21.00	23.30	18.10	15.90	14.70	27.25
Average 2000 rate	57.80	40.10	28.80	20.30	21.10	19.40	15.10	14.30	25.70
Average 1996 rate	41.50	32.30	26.00	17.00	18.60	15.20	12.60	11.20	20.75
Average 1991 rate	38.50	30.90	22.30	14.20	15.70	14.80	12.10	10.40	18.80
Pasture/Rangeland									
Average 2002 rate	33.70	32.00	23.70	18.70	19.70	15.60	8.90	7.20	14.50
High Productivity	42.50	41.30	30.90	23.70	25.60	20.60	12.30	11.90	
Low Productivity	23.50	22.10	17.10	14.50	14.10	10.60	5.60	4.00	
Average 2001 rate	30.90	30.40	21.00	17.50	20.80	12.90	8.60	6.60	13.50
Average 2000 rate	31.00	26.80	20.60	17.40	18.50	15.40	8.00	6.80	13.30
Average 1996 rate	21.20	22.10	18.80	14.70	16.30	12.00	5.60	6.10	11.05
Average 1991 rate	19.20	18.60	16.30	12.50	13.80	9.90	5.30	4.40	9.10
				dollars per Animal Unit Month					
Average 2002 rate	20.70	18.00	17.70	16.30	16.30	21.20	19.10	17.60	
High Productivity	25.70	21.50	23.00	19.00	19.00	25.80	23.90	22.20	
Low Productivity	16.10	14.50	10.70	13.40	13.40	15.60	14.20	13.40	
Average 2001 rate	20.00	21.00	18.60	16.80	17.40	19.80	17.80	15.75	
Average 2000 rate	18.70	17.90	19.80	15.50	17.40	19.20	16.20	16.70	
Average 1996 rate	17.50	16.70	15.60	14.70	16.30	16.60	16.40	16.20	
Average 1991 rate	13.70	15.90	15.50	12.80	14.80	15.20	14.30	13.00	

Source: South Dakota Farm Real Estate Market Surveys, SDSU, 2002 and earlier year reports.

Cash Rental Rates—Cropland, Hayland, and Irrigated Land

Average cash rental rates in 2002 for nonirrigated cropland vary from $20.40 per acre in the northwest region to $57.50 per acre in the northeast and $76.50 per acre in southeastern South Dakota (Fig 11 and Table 3). Average cash rental rates are highest ($91.90 per acre) in the Clay-Lincoln-Turner-Union (CLTU) cluster and next highest ($88.00 per acre) in the Minnehaha-Moody county cluster (Table 4).

Table 3a. Reported cash rental rates of South Dakota irrigated land by region, 1991-2002.

Type of Land	South-east	East-Central	North-east	North-Central	Central/ South-Central	Western
				dollars per acre		
Irrigated land						
Average 2002 rate	124.00	98.60	77.40	71.40	52.50	50.20
High Productivity	146.10	122.10	95.60	89.30	70.80	64.10
Low Productivity	98.90	78.10	67.80	58.60	38.30	40.60
Average 2001 rate	106.00	84.40	77.00	65.00	67.10	48.00
Average 2000 rate	104.80	84.00	75.00	61.80	55.60	46.60
Average 1996 rate	85.40	61.90	68.70	46.40	43.90	33.80
Average 1991 rate	82.70	69.00	59.00	***	***	37.50

*** Insufficient number of reports

Source: South Dakota Farm Real Estate Market Surveys, SDSU, 2002 and earlier year reports.

Within each region and county cluster, cash rental rate averages for low-productivity cropland are considerably lower than those reported for high-productivity cropland. For example, reported average cash rent for nonirrigated cropland in the southeast region is $55.10 per acre for lower-productivity cropland and $104.20 per acre for higher-productivity cropland. In the northwest region, the average cash rent for lower-productivity cropland is $13.30 per acre while cash rents for higher-productivity cropland average $27.40 per acre (Table 4).

This is the first year that average cash rental rates exceed $100 per acre for high productivity nonirrigated cropland in the southeast region. However, average cash rental rates for high productivity cropland has been above $100 per acre for several years in the CLTU county cluster and exceeded $100 per acre for the first time in 2001 in the Minnehaha-Moody county cluster.

Hayland cash rental rates in 2002 vary from an average of $15.50 to $17.50 per acre in western South Dakota and $20.40 to $23.40 per acre in the central regions of South Dakota. However, in the three regions of eastern South Dakota, hayland cash rental rates vary from an average of $31.00 in the northeast to $63.70 per acre in the southeast region (Table 3 and Figure 11).

In eastern South Dakota, average cash rental rates for hayland vary from highs of $78.20 in the CLTU cluster and $73.90 in the Minnehaha-Moody county cluster to about $38–39 per acre in the western county clusters of the southeast and east-central regions. In the northeast region average cash rental rates for hayland vary from $21 in the Clark-Day-Marshall cluster to $35.20 per acre in the Codington-Hamlin-Deuel county cluster (Table 4).

Within each region and county cluster, there are considerable differences in average cash rental rates of low-productivity and high-productivity hayland. For example, the average values of high- and low- productivity hayland in the Minnehaha-Moody cluster are $97.90 and $51.40, respectively. In most regions, the lower cash rental rates are reported for native hayland, while the higher rates are quoted for alfalfa or other tame hayland.
Cash rental rates for irrigated land vary from an average of $50.20 to $52.50 per acre in most regions of western and central/south-central South Dakota to $98.60 in the east-central and $124 per acre in the southeast (Table 3A).

Cash Rental Rates—Rangeland and Pasture

Nearly three eighths of South Dakota's 26.2 million acres of rangeland and pasture acres are leased to farmers and ranchers. Several million acres of rangeland in western and central South Dakota are controlled by federal, state, or tribal agencies and are leased to ranchers using cash leases or grazing permits. A majority of leased rangeland and almost all leased pasture are cash rentals from private landlords (Cole et al, 1992; SD Census of Agriculture, 1997). Respondents were asked to report 2002 cash rental rates per acre and per AUM on privately owned rangeland and pastureland in their locality.

Average cash rental rates per acre reflect regional differences in productivity and carrying capacity of pasture and rangeland tracts. Average cash rental rates vary from $7.20 to $8.90 in western South Dakota to $33.70 per acre in the southeast region. Typical cash rental rates for low-productivity and high-productivity rangeland vary from $4.00 to $11.90 in the northwest and from $23.50 to $42.50 in the southeast (Fig 12 and Table 3).

Rangeland rates per AUM in 2002 are fairly uniform across South Dakota, averaging $16.30 per AUM in the north-central and central regions to about $21 per AUM in the southeast and south-central regions.

Changes in Cash Rental Rates

Between 2001 and 2002, cropland cash rental rates increased in all regions of South Dakota and in almost all county clusters east of the Missouri River. Average cash rental rates for cropland increased from $5 to $8 per acre in several county clusters in eastern South Dakota. In most other regions and county clusters, cropland cash rental rates increased from $0.50 to $3.20 per acre. Statewide, cropland cash rental rates increased from an average of $47.35 to $51.10 per acre (Tables 3 and 4).
Hayland cash rental rates increased from $1.40 to $2.80 in most regions. Little change (-$0.40 per acre) was reported in the southwest region and a modest decline in average cash rental rate (-$2.20 per acre) was reported in the central region. Greater variability in hayland cash rental rate changes is shown for county clusters. Increases in cash rental rates occur in all county clusters of the north-central region while modest declines are report-

Table 4. Reported cash rental rates of South Dakota agricultural land by region and county clusters, 2002 and 2001 rates.

	Southeast				East Central			
	All	Clay Lincoln Turner Union	Bon Homme Hutchinson Yankton	Charles Mix Douglas	All	Minnehaha Moody	Brookings Lake McCook	Sanborn Davison Hanson Kingsbury Miner
	dollars per acre							
Nonirrigated Cropland								
Average 2002 rate	76.50	91.90	69.90	50.20	69.80	88.00	73.90	55.20
High Productivity	104.20	122.80	96.70	71.60	97.00	122.00	100.80	78.40
Low Productivity	55.10	68.00	49.20	33.80	49.20	63.00	55.00	35.75
Average 2001 rate	72.95	93.80	64.30	46.90	64.60	84.30	65.90	54.90
Hayland								
Average 2002 rate	63.70	78.20	58.00	38.10	49.20	73.90	45.00	39.30
High Productivity	79.80	98.30	72.10	47.40	64.70	97.90	55.00	53.70
Low Productivity	48.70	59.40	45.00	28.60	34.70	51.40	35.00	26.10
Average 2001 rate	61.20	81.90	55.00	36.05	47.60	69.20	47.30	36.10
Pasture/Rangeland								
Average 2002 rate	33.70	40.90	31.10	25.80	32.00	33.75	34.00	29.90
High Productivity	42.50	50.60	39.10	34.40	41.30	41.60	42.50	40.50
Low Productivity	23.50	29.50	20.10	19.50	22.10	21.90	24.80	20.40
Average 2001 rate	30.90	37.70	28.60	24.00	30.40	33.60	30.20	29.30

Irrigated cropland rental rates per acre and rangeland rental rates per AUM are not reported in this table, due to insufficient number of reports in most county clusters.
Source: South Dakota Farm Real Estate Market Surveys, SDSU, 2001 and 2002.

ed in a few county clusters of other eastern and central regions. Statewide, hayland cash rental rates increased about $1.45 per acre (Tables 3 and 4).

Statewide, average cash rental rates for rangeland and pasture increased by $1.00 per acre, from $13.50 to $14.50. Rangeland cash rental rates increases were greatest in the southeast, northeast, and south-central regions with average increases of $2.70 to $2.80 per acre reported. The central region was the only region where modest declines in cash rental rates were reported at the regional or county cluster level. The strongest increases in cash rental rates (+$3.60 to +$3.80 per acre) were reported in the Madison, Brookings, and Watertown areas (Codington-Deuel-Hamlin and Brookings-Lake-McCook county clusters) of eastern South Dakota.

West of the Missouri River, cash rental rates increased for cropland and rangeland uses in all regions. Hayland cash rental rates increased more than $2 per acre in the northwest and south-central regions and declined slightly in the southwest region. It is important to note that reported annual land value and cash rental estimates in these regions are based on reports from fewer respondents relative to the number of responses in all regions east of the Missouri River.

Respondents' perceptions of percentage changes in cash rental rates from 2001 to 2002 are generally consistent with the changes in dollar values of rental rates reported. More respondents (68% of the total number) reported increases in cropland cash rents than reported increases in hay, range, or pasture cash rental rates (63% of the total).

From 1991 to 2002, the average reported cash rental rates for cropland, hayland, and rangeland increased in all regions. Average cash rental rates of cropland increased from $6.70 in the south-central region to about $27 per acre in the east-central and southeast regions. During this same period, average cash rental rates of rangeland increased from $2.80 to $3.60 in the western regions to nearly $14 per acre in the east-central and southeast regions. Average increases in AUM rental rates across regions varied by $1.50 to $7.00 per AUM.

From 1991 to 2002, cropland cash rental rates increased at an annual average rate of 4.2% statewide with higher rates of

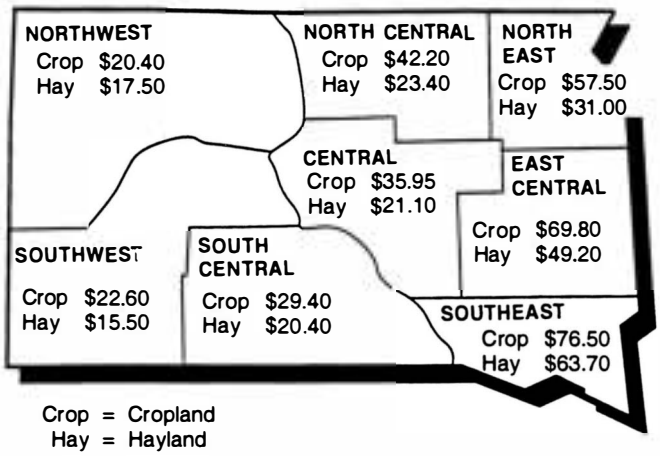
Table 4. Continued.

	Northeast				North Central			
	All	Codington Deuel Hamlin	Grant Roberts	Clark Day Marshall	All	Brown Spink	Edmund Faulk McPherson	Campbell Potter Walworth
	dollars per acre							
Nonirrigated Cropland								
Average 2002 rate	57.50	60.40	58.60	52.60	42.20	53.90	32.40	31.70
High Productivity	79.40	82.10	81.10	74.20	58.30	74.70	45.00	42.70
Low Productivity	40.10	41.25	42.80	36.00	29.50	38.50	22.30	20.70
Average 2001 rate	52.20	53.70	57.70	45.40	37.80	50.70	30.10	30.10
Hayland								
Average 2002 rate	31.00	35.20	32.10	21.00	23.40	26.70	20.70	20.90
High Productivity	41.30	46.30	42.50	29.20	29.80	35.60	26.00	24.20
Low Productivity	21.50	25.50	21.25	14.00	18.00	20.30	16.30	15.80
Average 2001 rate	28.90	36.70	29.20	21.80	21.00	26.05	17.40	18.25
Pasture/Rangeland								
Average 2002 rate	23.70	26.60	20.60	23.30	18.70	21.50	18.10	15.20
High Productivity	30.90	34.50	28.00	29.60	23.70	26.80	23.25	18.50
Low Productivity	17.10	19.60	14.90	16.20	14.50	17.60	12.00	12.70
Average 2001 rate	21.00	23.00	20.55	19.25	17.50	20.15	17.20	14.35

	Central				South Central	South West	North West
	All	Aurora Beadle Jerauld	Buffalo Brule Hand Hyde	Hughes Sully	All	All	All
	dollars per acre						
Nonirrigated Cropland							
Average 2002 rate	35.95	40.90	33.50	32.00	29.40	22.60	20.40
High Productivity	51.50	56.40	53.80	41.40	41.20	30.50	27.40
Low Productivity	24.10	26.40	21.00	24.40	20.40	17.20	13.30
Average 2001 rate	35.30	40.40	32.70	31.50	27.20	20.10	17.50
Hayland							
Average 2002 rate	21.10	22.50	22.80	*	20.40	15.50	17.50
High Productivity	28.60	29.20	33.20	*	27.25	19.20	24.30
Low Productivity	13.90	16.30	13.00	*	14.60	11.40	11.30
Average 2001 rate	23.30	24.25	23.20	21.30	18.10	15.90	14.70
Pasture/Rangeland							
Average 2002 rate	19.70	23.90	20.30	13.20	15.60	8.90	7.20
High Productivity	25.60	30.40	27.00	17.20	20.60	12.30	11.90
Low Productivity	14.10	17.30	13.70	10.00	10.60	5.60	4.00
Average 2001 rate	20.80	23.40	20.85	15.75	12.90	8.60	6.60

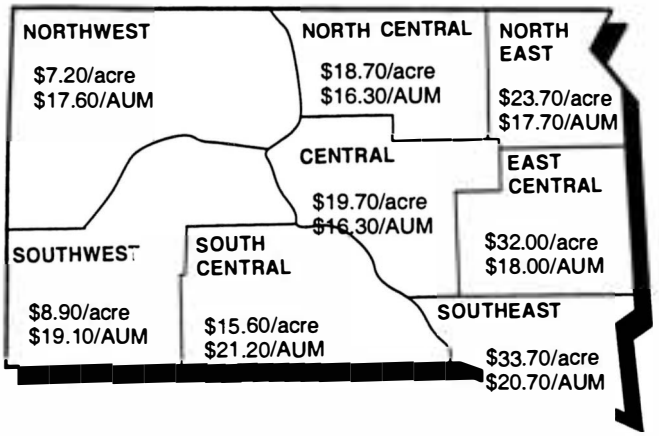
* *Insufficient number of reports for estimating hayland rental rates.*

Fig 11. Average cash rental rate of South Dakota nonirrigated cropland and hayland, by region, 2002, dollars per acre.



Source: 2002 South Dakota Farm Real Estate Market Survey, SDSU.

Fig 12. Average cash rental rate of South Dakota rangeland and pastureland by region, 2002, dollars per acre and dollars per AUM.



Source: 2002 South Dakota Farm Real Estate Market Survey, SDSU.

increases in the eastern regions and lower rates of increases in the south-central and western regions of South Dakota. Cropland rental rate increases were much higher in all regions from 1996—2002 compared to 1991—1996. For example, statewide average cash rental rates for cropland increased at an annual rate of 1.9% in the 1991—1996 period and 6.1% in the 1996—2002 period. Similar trends occurred for hay land and pasture/rangeland during the two periods. Thus, increases in agricultural land values from 1991 to 2002 are supported by increases in cash rental rates during the same period. The more rapid increases in cash rental rates and land values from 1996 to 2002 were directly related to crop price or government payment benefits that became quickly capitalized into land rents and values.

RATES OF RETURN TO SOUTH DAKOTA AGRICULTURAL LAND

Two approaches were used to obtain information on current rates of return to agricultural land.

First, gross rent-to-value ratios (gross cash rent as a percent of land value) were calculated from respondents' reported cash rental rates and estimated value of leased land. This is a measure of the **gross rate of return** obtained by landlords before deduction of property taxes and other landlord expenses. For most respondents, the estimated gross rate of return varies from 5.2% to 10% for cropland, 5.0% to 10.5% for hay land, and 4.0% to 9.2% for rangeland.[7]

The statewide average gross rate of return (rent-to-value ratio) is 7.4% for nonirrigated cropland, 7.2% for hayland, and 5.7% for rangeland. Regional average rent-to-value ratios vary from 5.7% (5.9%) in the southwest (northwest) region to 7.6% in the northeast. Across all regions and agricultural land uses, the 2002 average rent-to-value ratios were lower than the average calculated over the 1991—2001 period. In most cases, the average rent-to-value ratios were lower than calculated for the 3 preceding years of 1999, 2000, and 2001 (Table 5).

Next, respondents were asked to estimate the current **net rate of return** (percent) that landowners in their locality could expect, given current land values. Appraisers refer to the current annual net rate of return as the market-derived capitalization rate, which is widely used in the income approach to farmland appraisal. The net rate of return is a return to agricultural land ownership **after** deducting property taxes, real estate maintenance, and other ownership expenses.[8]

Average 2002 net rates of return were highest (5.2%) for nonirrigated cropland and lowest (3.9%) for rangeland and pasture.

[7] The range of reported rates of return and calculated rent-to-value ratios is shown for the middle 90% of responses for each land use. This represents the practical range of reported rates of return and rent-to-value ratios.

[8] The market derived income capitalization rate used by appraisers is equal to net returns to land divided by its current market value. One widely used method of estimating net return to agricultural land is subtracting property taxes, land maintenance expense, and other land ownership expenses from the gross cash rental rate for the same land. In each SDSU farmland market survey, respondents are requested to estimate this net rate of return by land use for agricultural land in their locality.

Table 5. Estimated rates of return to South Dakota agricultural land by type of land and by region, 1991-2002.

	2002	2001	2000	1999	Average 1991-01	2002	2001	2000	1999	Average 1991-01
Type of land-statewide	GROSS rate of return (%)					NET rate of return (%)b				
All agricultural land	6.5	6.7	6.9	7.0	7.3	4.5	4.8	5.1	4.6	5.3
Nonirrigated cropland	7.4	7.6	7.8	7.7	7.9	5.2	5.4	5.5	5.4	6.0
Rangeland & pasture	5.7	6.1	6.3	6.4	6.7	3.9	4.3	4.9	4.0	4.8
Hayland	7.2	7.3	7.5	7.6	7.9	4.7	5.1	4.9	5.1	5.5
Region [d]	GROSS rate of return (%)					NET rate of return (%)				
Southeast	7.1	7.2	7.1	7.2	7.4	5.0	5.4	5.2	4.9	5.8
East-Central	6.7	6.9	7.3	7.5	7.5	5.0	5.5	5.5	5.3	5.5
Northeast	7.6	7.6	7.8	7.9	8.1	5.5	5.6	5.5	6.0	6.1
North-Central	7	6.5	7.4	7.4	7.8	5.6	6.1	6.5	5.6	6.1
Central	6.6	7.5	7.4	7.3	7.7	4.7	4.6	4.5	4.5	5.2
South-Central	6.3	6.6	6.4	6.8	6.8	4.2	4.6	4.9	4.3	5.1
Southwest	5.7	6.7	6.2	6.8	6.7	3.4	4.0	3.6	3.5	4.3
Northwest	5.9	6.1	6.7	6.4	7.0	3.9	4.0	5.6	4.6	5.1

[a] GROSS rate of return (percent) is calculated by dividing the average gross cash rental rate by reported value of rental land.

[b]Net rate return is the reporter's estimate of the percentage rate of return to ownership given current land values. Appraisers often refer to this measure as the market capitalization rate.

[c]State level GROSS and NET rate of return estimates are calculated by weighting regional estimates by proportion of acres of each land use by region.

[d]Regional level GROSS and NET rate of return estimates are calculated by weighing the rate of return estimates for each land use by the proportion of the regions agricultural aceres in each land use.

Source: 2002 South Dakota Farm Real Estate Survey, SDSU

Most respondents reported net rates of return ranging from 2.0% to 8.0% for cropland and 2.0% to 7.0% for pasture, rangeland, and hayland. It is interesting to note that average gross rates of return and net rates of return for rangeland and pasture have been lower than corresponding rates of return to cropland and hayland in each year the survey has been conducted.

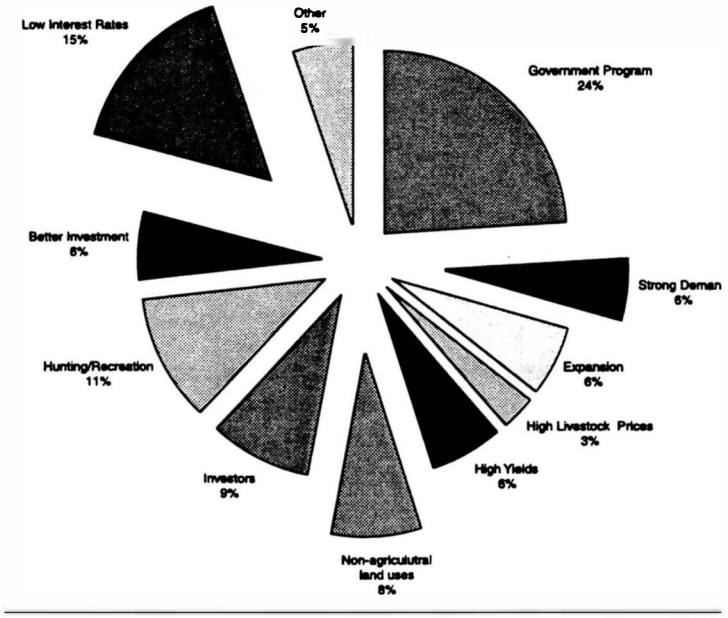
The statewide average estimated net rate of return in 2002 on all-agricultural land is 4.5%, which is lower than the 11-year average net rate of return of 5.3%. Net rates of return in 2002 for cropland, hayland, and pasture/rangeland were lower than the average net rates of return from 1991 to 2001 and than average net rates of return in the preceding 3 years of 1999, 2000, and 2001 (Table 5).

Average net rates of return by region in 2002 varied from less than 4% in western South Dakota to 5.5% in the north-central and northeast regions. During the 1991—2001 period, average rates of return by region varied from 5.1% to 6.1%, except for the considerably lower rate (+4.3%) reported in the southwest region.

During the 1991—2000 period, the difference between **gross** and **net** rates of return to agricultural land ownership has averaged 2.0 percentage points and varies from 1.6 to 2.4 percentage points across different regions and land uses (Table 5). Most of the difference between gross returns and net returns is caused by property tax levies.

The declines in gross cash rates of return and net rates of return in recent years reflect the fact that cash rental rates have been increasing at a slower rate than land values. Thus farmland investors are in market conditions where an increasing proportion of total returns are from expectations of capital appreciation

Fig 13. Positive factors in the farm real estate market.



instead of current cash returns. Nonetheless, cash rental rates are increasing, especially for cropland that experienced several years of near-record crop yields and federal farm program payments.

The current average net rate of return of 4.5% on all-agricultural land in South Dakota remains considerably lower than farmland mortgage interest rates. However, the spread between mortgage interest rates and current net rates of return has narrowed this past year, due to overall declines in interest rates. This still implies that large down payments are necessary before farmland purchases can be expected to cash flow from net returns. Major caution in real estate debt financing remains necessary in today's economic environment for production agriculture.

RESPONDENTS' ASSESSMENT OF FACTORS INFLUENCING FARMLAND MARKETS IN SOUTH DAKOTA

Respondents were asked to list major positive factors and negative factors affecting the farm real estate market in their localities. These factors help explain changes in the amount of farmland for sale, sale prices, and rental rates. Five sixths of respondents listed one or two positive reasons compared to three fourths listing one or two negative reasons.

Government farm program payments (24% of responses) continue to be listed more often than other items as a positive factor influencing land values or cash rents. However, 8% of respondents consider government payments as a negative factor due to the considerable dependence of Midwest and Great Plains agriculture on federal farm programs and the capitalization of program payments into higher cash rents and land values (Fig 13).

Low interest rates (15% of responses) was the second positive factor listed because of its influence in increasing land values and reducing borrowing costs for operating expenses and land purchases.

Investor interest and hunting/recreation interest in farm/ranch land along with other nonagricultural development were also listed as important positive factors (28% of positive responses) and negative factors (12% of negative responses) in the farm real estate market. During the 1990s, investor interest and hunting/recreation interest in farm/ranch land increased in relative importance and are now cited by several respondents in each region of South Dakota. Some respondents from the Black Hills and Sioux Falls areas cite the impact of other nonagricultural uses as an important factor affecting farmland markets in their locality. Most of the negative comments about "outside" investor interest are related to their ability to often outbid local farmers starting or expanding an operation.

Excellent crop yields, farm expansion, strong demand for land, and better returns to real estate relative to recent weakness in the stock market were the next four factors influencing farmland markets. In the early to mid-1990s, farm expansion was much more likely to be listed as a contributing positive factor.

Low crop prices continue as the principal negative factor affecting farmland markets, according to 42% of responses (Fig 14). Low returns and higher input costs along with uncertainty about the direction of the general economy and agricultural economy were also listed as important negative factors. This is the fourth year in a row where general economic and financial factors were the predominant negative responses. Many respondents continue to cite the combination of low crop prices and record farm program payments as an unsound foundation for continued increases in cash rents and land values.

AGRICULTURAL LAND MARKET EXPECTATIONS, PAST AND PROSPECTIVE

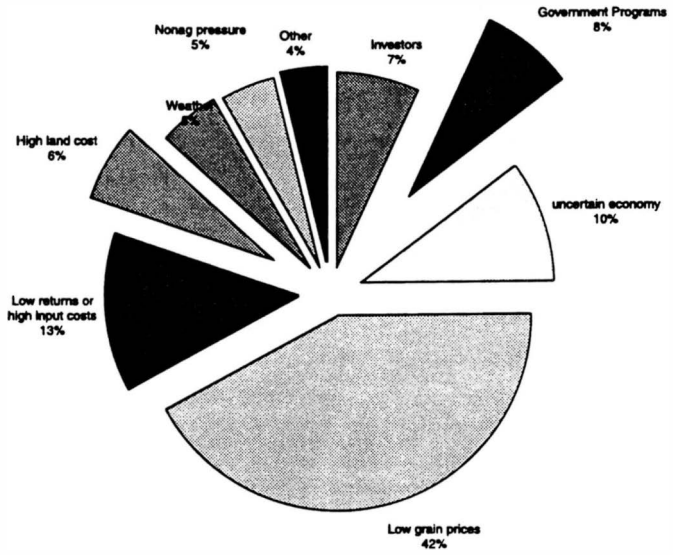
In each survey, respondents were asked to estimate the percentage change in land values during the previous year and to forecast percentage changes in land values for the following year.

During the past year, respondents' estimated percentage increases in land values averaged 7.3% for cropland, 6.6% for rangeland, and 6.4% for hayland. Most respondents' (78% to 84%, depending on land use) reported increases in land values during the previous 12 months, and only 1% indicated farmland values had declined. In general, respondents' perceptions of percentage changes in land values were similar to or lower than percentage changes calculated from "actual" dollar values.

During the past few years, about three fifths of respondents provided their forecasts of land value changes. Three fourths of these respondents expect land values to increase in the next 12 months and all others expect no change in land values. The median forecast percentage increase is 5% compared to an average (mean) forecast of +4%. No regional differences in forecast percentages could be discerned.

In summary, respondents to the 2002 survey remain optimistic about prospective farm/ranch land market conditions in the next 12 months. Farmland values have increased more than the rate of general price inflation from 1991 to 2001 in all regions and for all land uses in South Dakota. Cash rental rate increases provide underlying support for increases in land values. These basic economic factors attract interest in farmland purchases by investors and by farmers expanding their operations.

Fig 14. Negative factors in the farm real estate market.



Respondents indicate that lower interest rates, continued investor participation, crop yields substantially above long-term trends, government farm programs, improvements in livestock prices, and hunting/recreation demands have led to increases in land market values during the past 3 years. Poor stock market performance in 2001 has also increased interest in real estate, including farm real estate, as an investment. However, many respondents remain concerned about continued low grain/oilseed prices and the dependence of South Dakota agriculture on federal farm program payments.

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APPENDIX I: SURVEY METHODS AND RESPONDENT CHARACTERISTICS

The primary purpose of the 2002 South Dakota Farm Real Estate Market Survey was to obtain regional and statewide information on: (1) 2002 per-acre agricultural land values by land use and land productivity, and (2) 2002 cash rental rates by agricultural land use and land productivity. In addition, we obtained respondents' assessment of positive and negative factors influencing their local farm real estate market and motivations for buyer/seller decisions.

Copies of this survey were mailed to potential respondents on February 15 with a follow-up mailing on March 8. Potential respondents were persons employed in one of the following occupations: (1) agricultural lenders (senior agricultural loan officers of commercial banks or Farm Credit Service), (2) loan officer or county directors of the USDA Farm Service Agency (FSA), (3) Cooperative Extension Service agricultural educators and area farm management specialists, and (4) licensed appraisers and assessors. Some appraisers were also realtors or professional farm managers, while some lenders were also appraisers.

The total response rate was 41% of 666 persons contacted. Usable survey response rate was 36%. The distribution of 241 respondents by location and reported occupation is shown in Appendix Table 1. Eighty three percent of Farm Service Agency officials, 38% of agricultural lenders and Extension educators, and 25% of licensed appraisers or assessors contacted provided usable responses. Over time, an increasing proportion of respondents (64% in the 2002 survey) have been agricultural lenders or FSA officials.

The updated list of appraisers used in our mailing list does not distinguish between appraisers involved with residential, commercial, or agricultural real estate. Many appraisers are primarily involved with residential real estate markets and are not involved with agricultural land. Most of the unusable responses were from residential/commercial property appraisers not involved in farm real estate markets.

Half (51%) of the respondents were from the three eastern regions of South Dakota, 29.5% were from the three regions of central South Dakota, and 19.5% were from western South Dakota. Most respondents were able to supply land value and cash rental rate information for nonirrigated cropland, rangeland, and hayland in their localities. However, only 34% of respondents provided data on irrigated land values, 28% provided data on irrigated land cash rental rates, and 25% provided data on rangeland AUM rental rates. The overall pattern of response rates and respondent location has not changed very much in recent years.

Regional average land values by land use are simple average (mean) values of usable responses. Statewide average land values by land use are weighted by the relative number of acres in each region in the same land use. All-agricultural land values, regional and statewide, are weighted by the proportion of acres in each agricultural land use. Thus all-agricultural land values in this report are weighted average values by region and land use. This weighted average approach is analogous to the cost (inventory) approach to estimating farm real estate values in rural real estate appraisal.

This approach has important implications in the derivation of statewide average land values and regional all-land values. For example, the two western regions of South Dakota with the lowest average land values have nearly 61% of the state's rangeland acres, 39% of all-agricultural land acres, and only 16% of cropland acres. Our approach increases the relative importance of western South Dakota land values in the final computations and results in lower statewide average land values.

The weighting factors used to develop statewide average land values were based on estimates of agricultural land use for privately owned nonirrigated farmland in South Dakota and excludes agricultural land (mostly rangeland) leased from tribal or federal agencies, which is primarily in the western and central regions of the state. Irrigated land is also excluded from regional and statewide all-land values. The land-use weighting factors were developed from county-level data in the 1997 South Dakota Census of Agriculture and other sources (Janssen, 1999).

Regional average rental rates by land use are simple average (mean) values of usable responses. Statewide average cash rental rates for each land use are weighted by: (1) the relative number of acres in each land use, and (2) the proportion of farmland acres leased in each region.

Appendix Table 1. Selected characteristics of respondents, 2002.

Number of respondents = 241

Respondents:

Reporting location	N	%	*Primary Occupation*	N	%
Southeast	52	21.6%	Banker/loan officer	112	46.5%
East-Central	41	17.0%	Farm Service Agency	43	17.8%
Northeast	30	12.4%	Assessor	22	9.1%
North-Central	30	12.4%	Appraiser/realtor	39	16.2%
Central	20	8.3%	Extension educators	25	10.4%
South-Central	21	8.7%		241	100.0%
Southwest	20	8.3%			
Northwest	27	11.2%			
	241	100.0%			

Response rates:

Land values	N	%	*Cash Rental Rates*	N	%
Nonirrigated cropland	232	96.3%	Nonirrigated cropland	220	91.3%
Irrigated cropland	82	34.0%	Irrigated cropland	67	27.8%
Hayland	188	78.0%	Hayland	178	73.9%
Rangeland (native)	211	87.6%	Rangeland (acre)	195	80.9%
Pastureland (tame)	171	71.0%	Rangeland (AUM)	60	24.9%

Source: 2002 South Dakota Farm Real Estate Market Survey