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Farmland Leasing: South Dakota Farmland Leasing 2003

L. Janssen

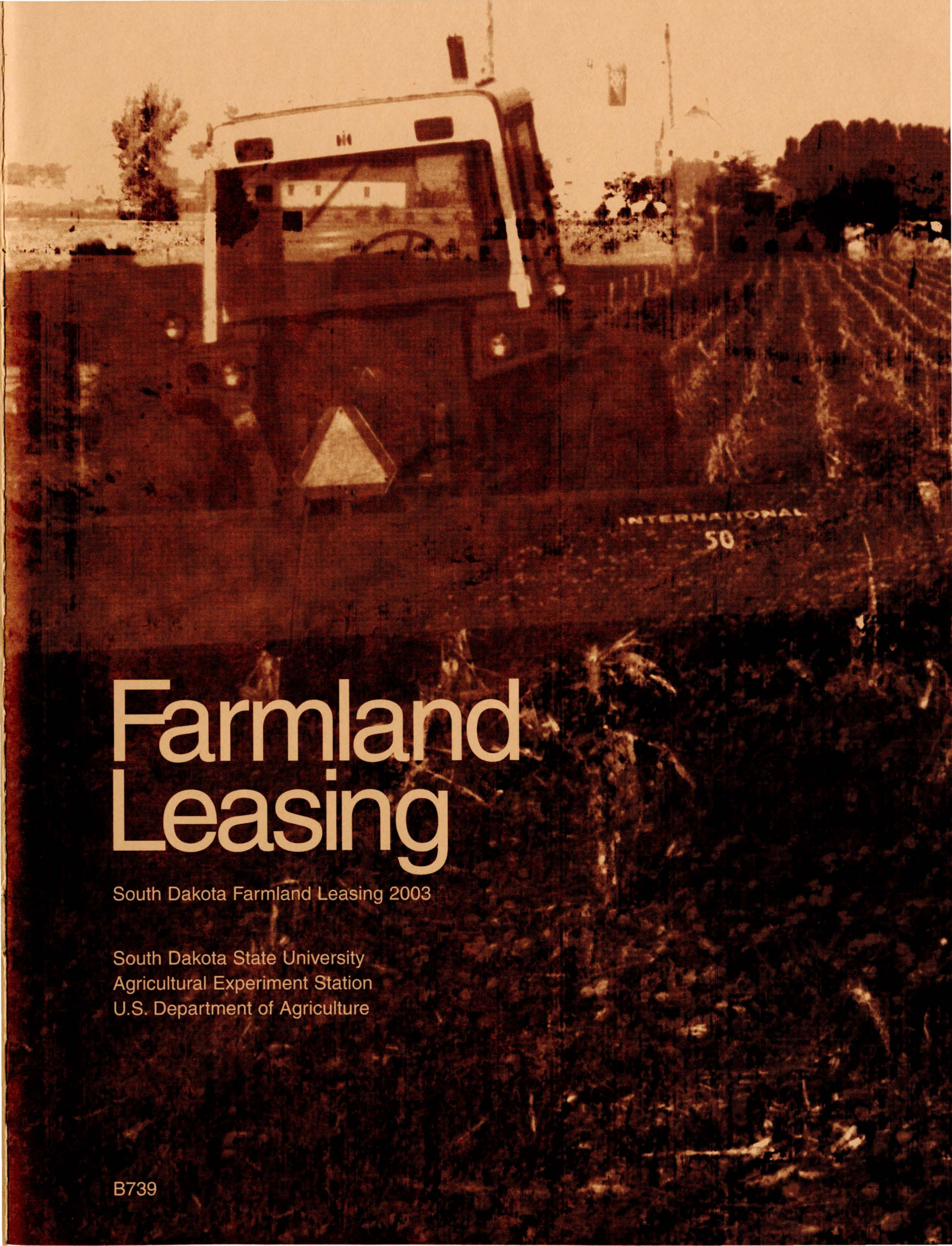
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Farmland Leasing

South Dakota Farmland Leasing 2003

South Dakota State University
Agricultural Experiment Station
U.S. Department of Agriculture

To the Reader:

Nearly 40% of South Dakota agricultural land is operated under a leasing agreement. Presented in this report are recent and longer term trends in land tenure, ownership, and leasing, based on Census of Agriculture data and related materials. Also presented are findings from the 1996 farmland leasing survey completed by 513 South Dakota farm operators: (1) characteristics of rental market participants and of the farmland leasing market, (2) detailed provisions of cash leases and share leases for cropland, and (3) economic evaluation of farmland leasing arrangements.

Information from the 1996 survey provides a comprehensive and statistically valid benchmark of agricultural land leasing in South Dakota, with primary emphasis on cropland leasing arrangements. This is the most comprehensive statewide study of South Dakota farmland rental markets since 1986. In many respects this publication updates and extends findings from the 1986 study reported in B 704, Farmland leasing in South Dakota, published by the South Dakota Agricultural Experiment Station (Peterson and Janssen, 1988).

This report should be of particular interest to renters and landlords, loan officers, realtors and appraisers, agricultural researchers, and others interested in farmland rental market developments.

We wish to thank all respondents who completed the survey. We also wish also to thank the reviewers for their constructive comments: Drs. Thomas Dobbs and John Cole of the SDSU Economics Department and Mary Brashier, information specialist, SDSU AgBio Communications Unit.

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This publication can be accessed electronically at <http://agbiopubs.sdstate.edu/articles/B739.pdf>

Sincerely,

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¹ Larry Janssen is professor, Economics Department, South Dakota State University (SDSU). Xuan Xu is a former graduate research assistant in the SDSU Economics Department. Research results reported in this bulletin are based, in part, on her Master's thesis, Economic analysis of agricultural land leasing practices in South Dakota.

**This publication and others can be accessed electronically at
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Farmland Leasing

South Dakota Farmland Leasing 2003

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South Dakota State University
Agricultural Experiment Station
U.S. Department of Agriculture

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South Dakota Farmland Leasing 2003

Summary, Conclusions, and Implications

More than half of the farmland¹ in the crop-intensive regions of eastern South Dakota and 38% of all farmland statewide were leased in 1997 (South Dakota Census of Agriculture, 1997), making leasing an important method of land resource control in the state's agricultural economy.

Land tenure, ownership, and leasing

About 70% of South Dakota farm operators have been involved in farmland leasing since 1978. Part-owner operators, who own some land and lease additional land, are the dominant land tenure group in terms of farm numbers, farm size, land owned, and land leased from others.

Most landlords (81%) in South Dakota are non-operator landlords; the rest are farmers leasing land to other farmers. In 1999, nearly 40% of privately owned farmland acres were rented out by their owners and more than 80% of these acres were leased from non-operator owners (USDA, 2001).

Landlords own 30% of the value of farm assets and 40% of the value of farm real estate in South Dakota. Landlords contribute 6.6% of farm operating expenses, with the largest outlays (and proportional share) for property taxes, interest payments on farm real estate loans, and shared expenses for fertilizer and chemicals (USDA, 2001).

A majority of agricultural land leases in South Dakota are cash leases (57%) and most of the rest are share leases (29%) or mixed share/cash leases (11%). Almost all pasture and rangeland leases are cash leases, while crop and hay leases are split between share and cash (USDA, 2001).

The discussion of cropland leasing arrangements and participants in this leasing market is based on data from the 1996 South Dakota Cropland Rental Arrangement Survey. Surveys were mailed to a stratified random sample of 2,300 farm operators and 577 were returned, of which 513 were usable. Among these 513 respondents, 352 provided detailed information about their cropland lease arrangements.

Summary: respondent and general leasing characteristics

1. Part-owners use leasing as a primary means to maintain and expand their operations. Part-owners were 77% of South

Dakota farmers leasing farmland, and they leased 75% of rented agricultural land (South Dakota Census of Agriculture, 1997). Part-owners were also the predominant respondents to the 1996 survey.

2. Respondents owned an average of 880 acres and leased an average of 714 acres from others. Respondents were representative of moderate and larger commercial family farms, but they underrepresented small farms with less than \$40,000 of gross farm receipts.

3. The age distribution of survey respondents closely corresponded to that of all South Dakota farm operators. Operators between 35 and 64 years of age were the main farmer participants in the farmland leasing market. Net farm income provided over half of household income for 62% of respondents.

4. Landlord type influenced the landlord-tenant relationship. A majority of leased acres and 62% of lease agreements involved contracts between unrelated individuals. However, a majority of tenants reported at least one lease agreement with a family member. The distribution of leased farmland acres by landlord relationship was 38% leased from parents or other relatives, 27% from local unrelated individuals, 24% from non-local unrelated individuals, and 11% from corporations, government agencies, or other entities.

5. Most leases tend to be informal arrangements. Oral leases continued as the most frequent type of contract. Oral leases, by law and tradition, are limited to one year. A majority of written leases are also annually renewable. However, the average duration of farmland leases was 12 to 14 years. Oral leases occurred more frequently when they were crop-share leases, lease agreements between family members, and leases of smaller sized tracts.

6. Multiple leasing by farm operators is the norm. Most (70%) respondents had two or more leases and landlords, while 30% had only one lease contract. The average number of leases per respondent was 3.2, while the average number of landlords was 2.8. Most renters contacted their landlords several times per year about management issues.

7. Most farmer respondents (75%) had one or more cash leases for crop production, while 64% of respondents held

¹ The terms "farmland" and "agricultural land" are used interchangeably in this report and include cropland and pasture. "Cropland" is agricultural land used for crop or hay production. "Pasture" is land used for tame (improved) pasture or range used for grazing. Other terms substituted for each other in the report are "renter" and "tenant" for farmers leasing land from others. A "landlord" is a person or entity leasing land to a tenant or renter. A landlord may be a farm owner-operator leasing land to another farmer or a non-operator landowner leasing all his or her land out.

one or more crop-share leases. Overall, 39% of respondents, including a majority of farmers with multiple leases, used a combination of crop-share and cash leases in their operation. 8. Most respondents reported considerable satisfaction with their leases and considered their leases as “fair” to both tenant and landlord. Only 4% of respondents were not satisfied with their share lease, compared to 12% of respondents not satisfied with their cash leases. Most respondents (73%) believed they would be able to continue leasing their tracts in the next 5 years.

Summary: cash leases and share leases

1. Cash leases for crop production were most common (43% of total leases), followed by crop-share leases (34%) and cash leases for pasture (22%). Approximately 67% of total acres leased by respondents were cropland, and 55% of these cropland acres were cash leased.

2. Almost all crop-share leases had one of the following tenant-landlord shares of output: 2/3-1/3 share, 3/5-2/5 share, 1/2-1/2 share, or 3/4-1/4 share. The dominant share arrangement varied by region and crops grown. Statewide, about 65% of crop-share leases involved a 2/3 share of the crop for the tenant. This share lease is dominant in most counties of the state, except for corn and soybean tracts in eastern South Dakota. The 3/5-2/5 share lease accounted for a fourth of total crop-share leases and was most common in eastern South Dakota.

3. Most (80%) crop-share lease respondents reported the landlord and renter sharing expenses for one or more inputs. Fertilizer was the most commonly shared input expense, followed by herbicide, crop drying, and insecticide expenses. Seed costs were usually shared by landlords and tenants in a 1/2-1/2 share lease but not usually shared in other types of share leases. Hauling and harvest costs were seldom shared. In most cases, if an input expense was shared, it was shared in the same proportion as output was shared.

4. Statewide, the average size of a crop-share lease was 265 acres, compared to 350 acres in a cash lease. Most crop-share leases (81%) were oral contracts, while oral and written leases were both common in cash leases. Nearly 59% of cash leases had two payments per year, with the first payment due in March or April and the second payment due in October or November.

5. The average duration of a share lease was 13.7 years compared to 11.7 years in a cash lease. Few respondents reported any change in the structure of their lease agreement in formality (oral vs. written) or renewal period length (multi-year or annual). Few share-lease respondents reported any change in output shares or input sharing during the past 5 years.

6. Major differences in cash rental rates occurred by region and are related to differences in agricultural productivity and crop production patterns across the state. For example, in

1996, the statewide average cash rental rate for cropland was \$35.75 per acre, varying from an average of \$16 to \$17 in western South Dakota to \$54.70 in the southeast region.

Depending on year, average cash rental rates in the northwest region were 24% to 28% of average cash rental rates in the southeast region.

7. Cash rental rates also changed considerably over time. From 1991 to 2001, average cash rental rates for cropland increased in all regions of South Dakota, with an annual average rate of increase of 1.9% from 1991 to 1996, 5.8% from 1996 to 2001, and 3.8% for the entire 10-year period. Cash rental payments were flexible over time but were somewhat “sticky” for individual leases. In 1996, 75% of cash leases had the rental payment adjusted within the previous 5 years.

8. Cash leases appear to be gaining in usage compared to share leases for cropland in South Dakota. An estimated 55% of leased cropland acreage was cash rented by respondents in 1996, compared to only 40% in 1986 (Peterson and Janssen, 1988). Results from the 1996 survey indicated 45% of respondents perceived a shift from share leases to cash leases for cropland was occurring in their localities. Twelve percent of respondents reported their current cash lease agreement had been converted from a share lease in the past 5 years, while very few reported any change from cash to share lease.

9. From an economic efficiency viewpoint, the output and input share in a share lease should reflect the relative contribution of the renter and landlord. Crop enterprise budgets were developed to estimate the relative contribution to expenses of tenants and landlords for typical crop-share lease arrangements in different regions of South Dakota. Analyses of 16 typical crop-share leases indicated shared costs closely reflected output shares for sunflowers, oats, and half of the corn and spring wheat budgets. However, the tenant’s input cost contribution was considerably lower than his output share for soybean budgets and some corn and grain sorghum budgets. These findings suggest that there is some pressure by landlords to renegotiate share-lease agreements or to convert a lease agreement from share to cash.

10. The changing economic cost structure across different crop enterprises and regions of South Dakota are major explanations for differences in typical share-lease agreements. Land costs, as a percent of total economic costs of crop production, vary from 20% of typical crop budget costs in western South Dakota to about 40% of soybean budget costs in the southeast region. These differences in the relative importance of land costs are a major reason why the landlord’s share of crop output changes across the state. Depending on crops grown and the share-lease agreement, costs of shared inputs vary from 10% to more than 35% of total economic costs. In general, as the landlord’s share of output increases, especially beyond one-third share of output, the extent of input cost sharing increases.

Conclusions and implications

Leasing agricultural land is an important source of capital in production agriculture and is an efficient approach in organizing and controlling land resources. Leasing allows farmers to enhance, maintain, or expand income-generating capacity. The extent of farmland leasing is likely to increase gradually over time, with part-owner operators and non-operator landlords continuing as the dominant rental market participants.

Relative differences in cash rental rates among regions of South Dakota will persist even though the level of cash rental rates will change over time. Regional differences in crop output shares and in the array of input shares reflect geographic differences in cropping patterns, yield risk, and cultural practices.

In practice, typical output shares and distribution of input costs become accepted over time as "fair" and equitable in a locality. Only significant alterations of farming practices and crops grown will lead to changes in output shares, in sharing of specific costs, or in other modifications in a share-lease agreement. The increased importance of soybean and corn production and shift to reduced tillage or no-till production will likely lead to some changes in the structure of crop-share leases or possibly increase the incidence of cash leasing.

Farmland leasing markets in South Dakota are comparably stable and informal. They are relatively local markets in nature. Most landlord-tenant relationships are between people who know each other. Local ties and reputations remain important in leasing agricultural land.

Share leases and cash leases are the two principal types of cropland leases, while cash leases are the overwhelming type of pasture lease. The extent of share leasing appears to be declining somewhat as the complexity of farm management decision-making increases and fewer landlords are involved in production agriculture. However, the cash lease and share lease each have specific advantages that the other one lacks, so neither type of lease is likely to replace the other.

Overall, farmland leasing remains an effective means of production control for farm operators and ownership control for landlords. General satisfaction with lease provisions and relatively low incidence of changes in lease provisions suggest slow and deliberate adaptation by rental market participants and institutions to changes in economic or agricultural conditions.

South Dakota Farmland Leasing 2003

Farmland leasing controls resources used in production agriculture by transferring use rights to agricultural land. In the U.S., farmland leasing has been widely practiced since colonial days, increasing in importance in the 20th century. In 1999 nearly 2.2 million agricultural leases were reported and 44% of the nation's agricultural land was leased. This totaled 419 million acres of agricultural real estate valued at an estimated \$480 billion (USDA, 2001).

Leasing provides farm operators the right to operate farmland and expand their operations without obtaining ownership or title. Common types of leases are cash, share, or combined cash/share leases. Selection of a specific lease arrangement involves economic considerations of distributing income, expenses, and risk/uncertainty between the landowner and tenant.

Key advantages to farm operators who lease farmland include (1) greater flexibility in selecting farm size, (2) more flexible financial obligations compared to land purchase financing, and (3) more working capital for purchasing machinery, livestock, or operating inputs. Major disadvantages are (1) uncertainty involved with lease renewal, which can result in fairly rapid, unwanted reduction in farm size, (2) slow equity accumulation during times of rising farmland prices, and (3) reluctance of landlords (and tenants) to invest in improvements (Janssen, 1993, pp. 470 – 471, adapted from Kay, 1981).

Because farmland leasing is widespread, it is important to understand its impact on the organization, distribution, and efficient use of resources and distribution of returns in production agriculture. Yet comparatively little data, especially

about share leasing, are available to show the characteristics of farmland rental markets in most states.

For these reasons, studies of farmland leasing practices and rental markets in South Dakota and in Nebraska were conducted in 1986 and in 1996. In both time periods, the project's emphases were an overall examination of rental markets for all agricultural land and a detailed examination of cropland leasing agreements, both share and cash leases. Results from the earlier (1986) studies were published in Agricultural Experiment Station research reports in both states and also in book chapters, journal articles, and other research papers (Lundeen and Johnson, 1987; Lundeen et al. 1988; Peterson and Janssen, 1988; Janssen and Johnson, 1989; Janssen, 1993).

This report on South Dakota farmland leasing markets and cropland leasing practices is based on data from the 1996 farmland leasing survey, from Census of Agriculture reports, and other more recent sources. In many respects, this report updates and extends findings from the 1986 study reported in B 704, *Farmland leasing in South Dakota*, published by the South Dakota Agricultural Experiment Station (Peterson and Janssen, 1988).

In the next section, recent and longer-term trends in South Dakota farmland tenure, ownership, and leasing are presented based on Census of Agriculture data and related reports. The remaining sections are primarily based on findings from SDSU research, including the 1996 farmland leasing survey. Following a discussion of survey procedures, major characteristics of farmer respondents and the farmland leasing market are presented and evaluated. Detailed comparisons of cropland lease agreements, both share and cash leases, are presented and discussed next. The final section contains an economic evaluation of farmland leasing arrangements.

South Dakota agricultural land tenure, ownership, and leasing

Through their land use decisions, landowners play a role in determining the nation's food supplies, natural resource development, conservation and environment, employment, and distribution of wealth and income. Many public policies affecting land use also affect those who own it, pay taxes on it, and earn income from it.

Information on land ownership and tenure provides the background and context for evaluating farmland rental

markets and leasing conditions. In this section, we focus on land tenure, ownership, and leasing information for South Dakota from the U.S. Census of Agriculture and from the closely related Agricultural Economics and Land Ownership Survey (USDA, 2001).² These two sources provide the most complete information about farm operations, farm operators, and landlords available in a common format for all states and for the U.S.³

Agricultural land tenure trends, 1940–1997⁴

Land tenure deals with the extent of ownership and control of agricultural land resources—about 70% of the total value of farm assets in South Dakota. Land tenure also influences resource organization and control at the farm level, freedom of the owner to make business decisions and take risks, ease of entry into farming, and transfer of farmland to the next generation. The key issue in land tenure is the extent of farm operator control of the farmland resource by leasing or ownership.

Land tenure statistics, compiled by the U.S. Census of Agriculture, classify farm operators into three main categories:

- Full-owners operate only land that they own. They may also lease land to other farmers.
- Part-owners operate land that they own and also lease additional land from others. Some part-owners may also lease land to other farmers.
- Full-tenants operate only land they lease from others.

The land tenure situation and trends in South Dakota, shown in Tables 1 and 2, are generally consistent with U.S. trends and have been influenced by changing economic and public policies concerning agriculture.

Land settlement in South Dakota from the 1860s to the early 1920s favored land ownership by families who tilled the soil—a direct result of the Homestead acts and similar legislation. Leasing land was a common practice for beginning farmers and for many others becoming established in production agriculture.

Declining economic conditions during the 1920s and 1930s drastically increased farm tenancy and the extent of farmland leasing in South Dakota, which reached a peak in 1940 when 53% of farmers were full tenants and 40% of farmland acres were leased by full tenants.

Major changes from 1940 to 1969 were rapid declines in relative importance of full-tenants and increased importance of full-owners and part-owners.

² A more detailed study of agricultural land tenure, ownership, and leasing trends in the U.S., in the north-central region, and in South Dakota and Nebraska from 1946 to 1988 is available in Chapter 18 of *Size, structure, and the changing face of American agriculture*, A. Hallam. Another reference is *Rents and rental practices in U.S. agriculture*, Wunderlich, ed.

³ The most recent (1999) AELOS survey, which is completed by farm operators and landlords, is an expansion of the 1997 Census of Agriculture that is only completed by farm operators. Since farm operators and landlords are surveyed, the AELOS can emphasize farm finance and land ownership information along with some information on farmland leasing that is not possible to readily obtain from only farm operators. For comparable items, the AELOS and Census of Agriculture provide similar, but not identical, findings. The Census of Agriculture includes information on all land in farms (private, tribal, state, and federal), while the emphasis in the AELOS is on ownership and leasing of privately owned agricultural land.

⁴ The material in this section is expanded from and adapted from the SDSU Economics Research Report 2000-1, *Structure of South Dakota agriculture changes and projections*, Diersen, et al.

Table 1. Agricultural land tenure trends in South Dakota, 1940-1997.

Tenure Class	Year:	1940	1950	1959	1969	1978	1987	1997
percent of farm operators								
Full owner		21	31	32	38	39	41	40
Part owner		26	38	41	45	45	43	46
Full tenant		53	31	27	17	16	16	14
Total		100	100	100	100	100	100	100
Thousands of farms		72.5	66.4	55.7	45.7	39.7	36.4	31.3
percent of land in farms								
	Year:	1940	1950	1959	1969	1978	1987	1997
Full owner		10	18	18	28	29	30	29
Part owner		50	63	65	61	61	59	61
Full tenant		40	19	17	11	10	11	10
Total		100	100	100	100	100	100	100

Sources: U.S. Census of Agriculture, South Dakota, various years.

Table 2. Relationship of farm tenancy in South Dakota to operator age and farm sales volume, 1997.

Farm tenure class				
Age of Operator	Full owner	Part owner	Full tenant	All farms
years	percent of farms			
Less than 35	7.8	8.7	30.9	11.5
35-54	38.3	54.0	48.7	47.0
55 and older	53.8	37.2	20.4	41.6
Total	100.0	100.0	100.0	100.0
Average age	56.1	50.8	42.8	51.8
Farm sales volume	Full owner	Part owner	Full tenant	All farms
percent of farms				
Less than \$20,000	55.7	12.5	36.9	33.3
\$20,000-\$99,999	31.5	39.2	41.9	36.5
\$100,000-\$499,999	11.0	43.4	19.4	27.0
\$500,000 and above	1.8	4.9	1.8	3.2
Total	100.0	100.0	100.0	100.0
Number of farms	12,598	14,322	4,364	31,284

Sources: U.S. Department of Agriculture, National Agricultural Statistical Service, 1997 Census of Agriculture, South Dakota, Vol. 1, Table 46

Only modest changes in land tenure have occurred since 1969 (Table 1). The proportion of leased farmland acres in South Dakota peaked at 70% in 1940 and steadily decreased to between 36% and 40% from 1969 to 1997.

Full-tenants have declined rapidly in total numbers, percent of farms, and proportion of land in farms. By 1997, full-tenants were only 14% of farmers leasing only 10% of South Dakota agricultural land. Full-tenants are usually young or middle-aged farmers, and 79% of them sold less than \$100,000 of farm products in 1997 (Table 2).

Full-owners recovered from a low of 21% of farmers in 1940 to 38% of farmers in 1969, increasing to 40% of farmers since then. However, full ownership is not the major indicator of economic status or well-being in agriculture that it was in earlier decades. As shown in Table 2, full-owners are concentrated among older farmers with relatively low farm product sales volume; 54% are aged 55 years or older, and 56% sold less than \$20,000 of farm products per year. More than 30% of full owners also are landlords leasing some of their farmland to others.

Since World War II, part-owners have emerged as the dominant tenure class in terms of farm numbers, land in farms, and average farm size. The proportion of part-owners increased from 26% of farmers in 1940 to 45% in 1969 and has not changed very much since then. The average size of part-owner operated farms in 1997 was 1,905 acres (1,024 acres owned and 881 acres leased), compared to 1,013 acres owned and operated by full-owners and 988 acres leased and operated by tenants (South Dakota Census of Agriculture, 1997, table 46). The amount and proportion of farmland acres leased by part-owners has been fairly stable (about 60%) since 1950. Part-owners tend to be middle aged, and nearly half have farm product sales exceeding \$100,000.

Agricultural land ownership and leasing⁵

The most current information on patterns of farmland ownership and leasing is from the Agricultural Economics and Land Ownership Survey (USDA, 2001) conducted in 1999. This survey is an extension of the 1997 Census of Agriculture, the only national survey of land ownership and finance that is completed by farm operators and also landlords. A total of 528 farm operators and 1,428 landlords from South Dakota participated in this survey, and the published results are expanded to statewide estimates.

Land ownership distribution

The pattern of ownership of South Dakota agricultural land covers the full range of age classes, occupations, and income levels. However there are two basic owner groups: (1) owner-operators (farmers) who operate some or all of the

land that they own; and (2) non-operator owners who lease their owned farmland to others and do not operate any farmland.

From a land tenure viewpoint, owner-operators include all farm operators that are classified as part-owners and full-owners but do not include full-tenants. Some owner-operators may also rent out some land to other farmers, either full-tenants or part-owners. Non-operator owners are similar in concept to non-operator landlords and both terms will be used interchangeably in this report. The main difference is that a non-operator owner with separate leases to different farm operators is only counted once as an owner but is a landlord to several farm tenants. Thus the number of non-operator owners may be considerably lower than the number of non-operator landlord-tenant relationships.

As of 1999, there were nearly 61,400 owners of private agricultural land⁶ in South Dakota. Nearly 30,600 were owner-operators and 30,800 were non-operator owners. Of more than 40 million acres under private ownership, farm operators owned two-thirds of the total acreage while non-operators owned the remaining third. Thus, the average amount of farmland owned by farm owner-operators is much greater than the average amount owned by non-operator owners (Table 3).

Based on 1999 AELOS data, non-operator owners owned and rented out nearly 33% of privately owned farmland acres, 44% of crop/hay acres, and only 21% of privately owned rangeland acres in South Dakota. Thus, cropland is the land use of two-thirds of farmland acres owned by non-operator owners, compared to 42% of land owned by owner-operators. Over half of acres owned by owner-operators is in pasture or rangeland (Table 4). Consequently, per-acre average value of farm real estate owned by non-operator owners was greater (\$536 vs. \$427 per acre in 1999) than reported for farm operators (USDA, 2001, Table 71).

Most (87%) agricultural landowners in South Dakota own cropland, but only two-thirds own pasture or rangeland. Non-operator owners are much more likely to own cropland than pastureland, while the incidence of farm operator ownership of cropland or pastureland is similar (Table 4).

Rental market participants

Participants in South Dakota's 1999 rental market for agricultural land included nearly 38,000 landlords and 19,600 renters.

Landlords include all non-operator owners who rent out all of their owned land, and those farm operators who rent out some of their owned land to others. Together, they leased out an average of 418 acres per landlord in 1999 and were

⁵ The material in this section is adapted and expanded from Cole and Janssen (2003).

⁶ Privately owned agricultural land does not include tribal trust or federal or state owned lands of nearly 5 million acres in South Dakota. Most of the tribal trust and public lands used in agriculture are pasture and rangeland leased to farmers and ranchers including grazing permits.

involved in an average of 1.9 leases.

On the tenant side of the market, an estimated 19,600 farmers leased farmland from others in 1999. These farmers were leasing an average of 810 acres that were contracted through an average of 3.6 leases (Table 5).

Nearly 16 million acres of privately owned farmland in South Dakota were leased to farmers and ranchers. In effect, nearly 40% of privately owned farmland acres was rented out by its owner and more than 80% of leased farmland acres was leased from non-operator owners. As previously noted, cropland was more likely than pastureland to be leased from non-operator owners.

The above information and results from previous research (Peterson and Janssen, 1988) imply that multiple leases and multiple landlords are the norm rather than the exception. Farm owner-operators tend to own more acres than non-operator owners, but the latter provide 80% or more of private farmland acres leased in South Dakota. The number of owner-operators has declined from a peak of 46,400 in 1950 to nearly 38,000 in 1969 and about 30,000 in 1999, while the number of non-operator landlords has probably increased. However, the proportion of farmland owned by farm operators has changed very little in the past 30 years; farmers own about two-thirds of South Dakota's farmland. Since 1978 about 70% of South Dakota farm operators have

leased farmland from others or to others. During this time period, about 60% of farmers have leased farmland from others with a slowly growing proportion of part-owners and declining proportion of full-tenants. The proportion of South Dakota farmers (both part-owners and full-owners) that own and lease some farmland to others has increased from 13.8% in 1978 to 19.4% in 1997 (South Dakota Census of Agriculture, various years).

Sustained net out-migration of farm youth and relatively high rates of farm retirement are likely to be major explanations of these ownership trends. A substantial (but unknown) percentage of non-operator landlords are retired farmers or farm widows receiving retirement income from renting out their farmland. Also, many non-operator landlords were raised on the "family farm" but currently live elsewhere and work in other occupations.

Landlord and operator contributions – a financial perspective

Landlords are an important source of capital in agriculture. Based on 1999 AELOS data, farm real estate is 71% of the value of South Dakota farm assets.

Landlords own 40% of the value of South Dakota farm real estate. Overall, landlords contribute nearly 30% of the value of all farm assets in South Dakota with most of those assets

Table 3. Distribution of agricultural land ownership between owner-operators and non-operator owners, South Dakota, 1999.

Item and Percent	Owner-operator ¹	Non-operator owners ²	All owners
Number of owners	30,600	30,780	61,380
Percent of all owners	49.9	50.1	100.0
Total acres owned ³ (1,000)	26,899	13,446	40,345
Percent of acres owned	66.7	33.3	100.0
Average number of acres owned	879	436	657

¹ Individuals who operate at least some of the land they own.
² Individuals who rent out all of their owned land to others.
The total acres estimated in the 1999 AELOS reported above are lower than reported in the 1997
³ Census of Agriculture, but are consistent. The Census of Agriculture reports 44.3 million acres of land in farms which includes land leased from public (tribal and government) agency landlords.

Source: U.S. Dept. of Agriculture. Agricultural Economics and Land Ownership Survey (AELOS), 1999
1997 Census of Agriculture. Table 69.

Table 4. Land use characteristics of agricultural land owned by owner-operators and non-operator owners, South Dakota, 1999.

Land Use	Owner operator	Non-operator owner	All land owners	Owner operator	Non-operator owner	All land owners	Owner operator	Non-operator owner
	thousands of acres			percent of farmland owned			percent of acres owned by land use	
Cropland	11,370	8,979	20,349	42.3	66.8	50.4	55.9	44.1
Pastureland	14,796	3,973	18,769	55.0	29.6	46.5	78.8	21.2
All other land	734	494	1,228	2.7	3.7	3.0	59.8	40.2
Total Farmland	26,899	13,446	40,345	100.0	100.0	100.0	66.7	33.3
Land Use Ownership	number of owners			percent of all land owners by ownership class			percent of owners by land use	
	Owner operator	Non-operator owner	All land owners	Owner operator	Non-operator owner	All land owners	Owner operator	Non-operator owner
Cropland owners	24,250	28,880	53,130	79.3	93.8	86.7	45.6	54.4
Pastureland owners	23,500	17,570	41,070	76.8	57.1	66.9	57.2	42.8
All land owners	30,600	30,780	61,380				49.9	50.1

Source: U.S. Dept. of Agriculture. Agricultural Economics and Land Ownership Survey (1999), 1997 Census of Agriculture, Tables 75, 77, 79.

Table 5. South Dakotas agricultural land rental market participants, 1999.

Total number of leases	71,535
Total number of acres leased (1,000)	15,902
Total number of landlords ¹	37,980
Average acres leased per landlord	418
Average number of leases per landlord	1.9
Total number of renters ²	19,640
Average acres leased per renter	810
Average number of leases per renter	3.6

¹ Landlord includes all non-operator owners and owner-operators who lease out some land to others.

² Renters include part-owners who lease in some of the land they operate, as well as full tenants who operate only land leased from others.

Source: U.S. Dept. of Agriculture, Agricultural Economics and Land Ownership Survey (1999), 1997 Census of Agriculture.

Table 6. Distribution of farm assets owned by farm operators and landlords, South Dakota, 1999.

Farm Asset Item	Farm Operator	Landlord	Total	Landlord amount as	
				percent of total landlord farm assets	percent of farm asset item
	millions of dollars				
Land & buildings	11,519	7,774	19,294	96.5	40.3
Machines & equipment	3,157	117	3,274	1.4	3.6
Crops and livestock inventory	3,563	93	3,656	1.2	2.5
All other farm assets	849	76	925	0.8	8.2
Total farm assets	\$19,088	\$8,060	\$27,148	100.0	29.7

Source: U.S. Dept. of Agriculture. Agricultural Economic and Land Ownership Survey (1999), 1997 Census of Agriculture. Tables 30, 32, 35.

(96.5%) held as real estate (Table 6).

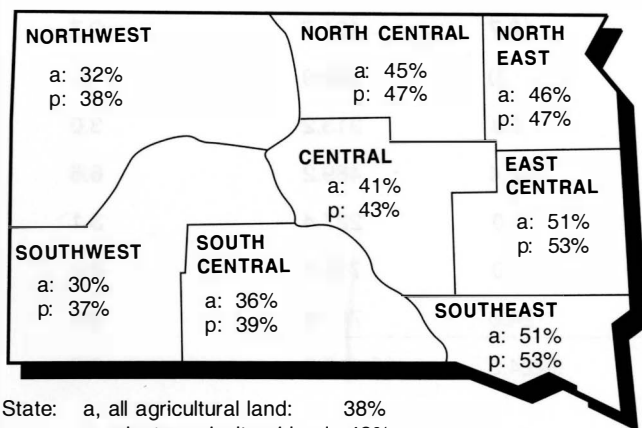
Landlords pay nearly 48% of farm property taxes (excluding dwellings), 15% of interest payments on farm real estate debt, and 10% of farm insurance expenses. In dollar amounts, their largest expenditures are for property taxes, interest payments on farm real estate loans, and shared expenses for fertilizer and chemicals. Overall, South Dakota landlords contribute 6.6% of total farm operating expenses but only 1.6% of farm capital purchases, primarily for real estate improvements (Table 7).

Relative importance of farmland leasing

Based on data from the 1997 Census of Agriculture, 38% of South Dakota’s 44.4 million acres of land in farms are leased from private, tribal, or public (federal or state agencies) landlords. The proportion of leased agricultural land varies from nearly 51% of all agricultural acres in the east-central and southeast regions to 41% in the central region and only 30% in the southwest region (Figure 1).

Most of the tribal and public owned lands leased by farmers and ranchers is rangeland in western and central regions of South Dakota. The estimated proportion of privately owned farmland acres leased varies from 37% to 39% in western and south-central regions to nearly 53% of farmland acres in the east-central and southeast regions (Figure 1).

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



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

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

In other words, leasing of privately owned land is more prevalent in the crop-intensive regions of eastern South Dakota than in the western rangeland regions. These findings are consistent with the 1999 AELOS results that indicate cropland is more likely to be leased than pastureland from private landowners, especially non-operator owners.

Previous research indicated cash leases are overwhelmingly used in South Dakota pasture leases, with payment based on a per-acre rate or based on some measure of stocking rate such as animal unit month, per head per month, etc. For cropland, including hay land, per-acre cash leases or crop-share lease arrangements, where the landlord receives a share of the output and in many cases pays for a share of specific input expenses, were more common. Some leases were a mixture of share and cash payments. Common examples of cash-share leases were

share leases for cropland with a cash payment for pasture, for the use of buildings, or for hay (Peterson and Janssen, 1988; Cole et al., 1992).

Based on 1999 AELOS data, 57% of the nearly 71,500 agricultural land leases in South Dakota were cash leases. Share leases were another 29% of all leases, while 11% were cash-share leases. Very few lease agreements (2%) in South Dakota were "other" than these arrangements. The average number of acres in a cash lease or in a share lease was similar and much lower than the average number of acres in a combination cash-share lease (Table 8).

The amount of gross rent received per acre in a share lease is much higher than the amount received per acre in a cash lease or cash-share lease, indicating that share leases are mostly concentrated on cropland and that some input expenses may be shared. The considerably lower gross rent

received per acre for cash leases and cash-share leases indicates a substantial proportion of cash payments are probably for pasture or hay.

The total amount of gross rent received as cash or share (\$638.1 million in 1999) was 14.6% of estimated total receipts (including government payments) received by all South Dakota farmers and ranchers. Non-operator landlords obtained nearly 80% of the gross rent received by all South Dakota landlords (USDA, 2001, Table 99).

Key linkages

From this information on land tenure, ownership, and leasing, we conclude that: (1) landlords provide a major source of capital to most commercial farm operators, and (2) farmland rental markets are a permanent feature of U.S. and

Table 7. Combined capital purchases and operating expenses of farm operators and landlords, South Dakota, 1999.

Item	Farm operators	Landlords	Total	Landlord outlay as percent of row item
Capital Purchase				
millions of dollars				
Real estate improvements	348.3	7.0	355.3	2.0
All other capital items	482.0	6.1	488.1	1.3
Subtotal:	\$830.3	\$13.1	\$843.4	1.6
Operating Expenses				
Property taxes	108.1	99.2	207.3	47.9
Interest expense on:				
Farm real estate debt	196.5	34.9	231.4	15.1
Farm operating debt	113.2	3.6	116.8	3.1
Farm insurance	119.0	12.7	131.7	9.7
Cash rent	289.9	0	289.9	0
Repairs & maintenance	303.9	9.3	313.2	3.0
Fertilizer & chemicals	456.8	32.4	489.2	6.6
Seed & plants	220.4	7.0	227.4	3.1
Livestock & feed	700.5	1.0	701.5	0.1
All other items	689.8	24.0	713.8	3.4
Total operating expense	\$3,198.2	\$224.3	\$3,422.5	6.6
Source: U.S. Dept. of Agriculture. Agricultural Economic and Land Ownership Survey (1999), 1997 Census of Agriculture. Tables 37, 39, 42.				

Table 8. Agricultural land rented by type of lease, South Dakota, 1999.

Type	Lease		Acreage			Gross Rental Payment \$/acre
	No.	Percent Distribution	1,000 Acres	Percent Distribution	Avg. Size (Acres)	
All Leases	71,535	100.0	15,902	100.0	222	\$41.10
Cash Leases	41,080	57.4	8,812	55.4	215	\$35.75
Share Leases	20,875	29.2	4,361	27.4	209	\$57.80
Cash/Share Lease	8,043	11.2	2,395	15.1	298	\$25.70
Other Leases	1,537	2.1	334	2.1	217	\$27.05

Source: U.S. Dept. of Agriculture. Agricultural Economic and Land Ownership Survey (1999), 1997 Census of Agriculture. Table 99.

South Dakota agriculture.

The relative importance of landlords (and therefore leasing) will continue to gradually increase because: (1) “commercial farmers are usually able to achieve higher current rates of return by investing in other production assets; (2) farmland ownership is a source of current returns and potential capital appreciation with risk-return characteristics that are attractive to many investors (farmers and landlords); and (3) farmland remains a major source of “consumption income” (utility) for many owners, even though their primary income may be obtained from non-agricultural pursuits” (Janssen, 1993, p. 495).

Rental market participants are predominantly non-operator landlords and part-owner operators leasing additional land to expand their operation. In many cases, the most efficient method of expanding commercial farm operations is to lease rather than purchase additional farmland. Leasing often conserves expanding farmers’ working capital by reducing financial outlays to acquire farmland. Part-ownership also permits these farmers to obtain the advantages of both farmland ownership and leasing. In an economic environment of farm expansion, part-ownership is an important capital management strategy to increase current returns and to reduce business risk.

The principal farmland buyers during the past 50 years have been established middle-aged farmers who already owned some farmland and perhaps leased additional land. In the future, established farmers and non-farm investors are likely to be the major buyers of South Dakota farmland. These two groups are in the best position to finance land purchases and have the necessary motivations to purchase agricultural land. It is also likely that an increased share of land may be leased or custom farmed instead of fully operated by the landowner.

Survey of farmland leasing practices in South Dakota

Data for analyses of farmland rental markets and cropland rental practices were primarily obtained from the 1996 South Dakota farmland leasing survey. Results were used to update findings from the previous survey (Peterson and Janssen, 1988), especially for cropland rental arrangements and for characteristics of farmland renter participants.

Both the 1986 and 1996 surveys were jointly conducted with the Department of Agricultural Economics, University of Nebraska-Lincoln (Johnson et al. 1986; Cole, 2000). The mail questionnaires used in both states in both years contained nearly identical questions, except more detailed information was requested about irrigated-land leasing in Nebraska. A key difference between the two periods is the mailing of questionnaires to a sample of farm landlords and renters in the 1986 survey, compared to a sample of farm operators in the 1996 survey.⁷

Farmland rental survey procedures

A mail questionnaire was used to obtain information on: (1) socio-economic characteristics of farm operators and their participation in farmland leasing, (2) detailed provisions of cash and share leases, and (3) respondents’ overall assessment of their leasing arrangements. A copy of the 1996 survey is found in Xu (2002).

The target population of South Dakota farmers leasing cropland is not available as a subset in the comprehensive list of farm operators maintained by the South Dakota Agricultural Statistics Service. Therefore, the sample frame of farm operators was stratified into five farm sizes (acres operated) that

⁷ In the 1986 farmland leasing survey, a sample of farm landlords and renters was randomly selected from the producer mailing list maintained by USDA-ASCS by special arrangement with the USDA-ERS. In the 1996 farmland leasing survey, a stratified random sample of farm operators was selected by the National Agricultural Statistics Service (USDA-NASS) office in each state. NASS maintains a comprehensive list of farm operators but does not maintain a list of non-operator landlords. NASS personnel also conducted the mailing of survey questionnaires as part of the research contract and to maintain confidentiality of names and addresses on their mailing list.

would be positively related to incidence of leasing farmland: 50-249, 250-499, 500-749, 750-999, and more than 1000 acres operated. This approach sampled commercial farms that were more likely to lease land and omitted small mostly non-commercial farms of less than 50 acres.

A sampling rate of 12% was used to select farms of more than 500 acres, compared to a sampling rate of 8% for farms of 250-499 acres and 4% for farms of 50-249 acres. Due to differences in sampling rates, different expansion factors were used to weight sample responses by size category. Weighted response data are reported in most tables.

Surveys were sent to 2,300 South Dakota farm operators. A total of 577 surveys were returned, and 513 usable completed surveys were used to examine general characteristics of the farmland leasing market in South Dakota. A subset of 352 respondents who provided detailed information about their lease agreements was examined to evaluate crop-share and cash-lease arrangements. The number of respondents on whom the findings are based is listed in each table.

Socio-economic characteristics of survey respondents

Table 9. Comparison of respondent characteristics to 1997 Census of Agriculture data

Item	1997 Census ^a	Survey Respondents ^b	Item	1997 Census ^a	Survey Respondents ^b
	percent of item ^c			percent of item ^c	
Size of farm in acres			Gross farm sales (\$1000)		
50-259	23.8	17.9	Less than \$40	41.6	30.1
260-499	17.2	18.8	\$40-\$99	24.8	29.2
500-999	21.2	23.7	\$100-\$249	22.7	27.6
1000-1999	18.7	20.7	\$250- \$499	7.3	9.3
2000 +	19.1	18.9	\$500 +	3.5	3.9
Tenure			Operator Age		
Full owners	35.0	27.7	Less than 35	10.9	7.5
Part owners	50.9	64.3	35-44	23.5	22.0
Full tenants	14.2	8.0	45-54	23.1	21.3
			55-64	19.1	20.6
			65+	23.1	28.5
Business Organization			Operator Gender		
Proprietor	87.0	86.9	Male	95.8	95.9
Partnership	8.7	7.9	Female	4.2	4.1
Corporation	4.3	5.2			
Land Operated	percent of acres				
Owned land	61.8	57.3			
Rented land	38.2	42.7			

^a Percentages for each item from the 1997 Census of Agriculture are based on the total number of South Dakota farms (27673) reporting farm operations of 50 acres or more. Excluding from the compilation are 3611 South Dakota farms reporting less than 50 acres.

^b Percent of responses for each item based on weighted averages of the 513 respondents. Non-response rates per item, varying from 3% to 7%, are not included.

^c Percent by item should equal 100.0 except for rounding errors.

Source: 1996 South Dakota Cropland Rental Arrangement Survey. 1997 U.S. Census of Agriculture, South Dakota.

Key characteristics of respondents were compared with those of South Dakota farm operators in the 1997 Census of Agriculture (Table 9). As expected, there are some differences between census and survey data.

In 1997, nearly 24% of South Dakota farms were 50 to 259 acres, compared to 18% of survey farms. For all other farm sizes, the percentage distribution of farms (based on expanded data) reported in the survey is close to or slightly higher than the distribution reported in the census. These findings are further reinforced by comparing gross farm sales data that show a lower proportion of respondent farms, compared to all farms, generating gross farm sales of less than \$40,000 (Table 9).

As expected, most survey respondents were part-owners and much lower proportions of respondents were full-owners or full-tenants. The proportion of farmland leased by survey respondents, 42.7%, is higher than shown in the census but similar to our estimates of leased private land.

The age distribution of survey respondents closely matched that of all South Dakota farm operators. Nearly 64% of respondent farmers were between 35 and 64 years old, another 28.5% were 65 years or older, and relatively few were less than 35. This age distribution corresponds with a declining number of producers, as fewer young people are replacing producers exiting from farming as well as older

retiring farmers (Diersen et al., 2000).

Nearly all respondents (96%) were men. Most respondent farmers (86%) had graduated from high school, 30% had completed vocational training or some college, and 23% were college or university graduates. The amount of formal education obtained by farmers has increased over time and is consistent with societal trends (Xu, 2002).

Nearly 63% of respondents obtained a majority (over 50%) of their net household income from their farm operation, while 37% of respondents obtained a majority of their net household income from off-farm sources (Xu, 2002).

Farmland leasing distribution

By land tenure

Respondents own an average of 880 acres and operate 1,503 acres, renting out an average of 91 acres to other farmers and leasing in an average of 714 acres from landlords. The distribution of land leased and owned varies greatly by tenure status. Part-owner operators dominate with an average of 856 acres rented from others, 977 acres owned, and 1,833 acres operated. Full-owner operator landlords own a similar number of acres but lease a portion of it to others. Finally, full-tenants rent an average of 675 acres from others (Table 10).

By landlord type

Table 10. Distribution of respondents farmland owned, leased, and operated by tenure status, South Dakota, 1996.

Tenure status	Percent of respondents ¹	Average number of farmland acres: ²			
		Owned	Leased to others	Leased from others	Operated
Full tenant	8.5	-	-	675	675
Part owner-operator	69.5	977	-	856	1833
Part owner-operator-landlord	13.1	939	300	587	1226
Full owner-operator-landlord	8.8	1018	511	-	507
Respondents involved in leasing farming	100.0	880	91	714	1503

¹ Percent of 398 respondents involved in leasing farmland from others and/or to others. Does not include 79 full owners that owned and operated an average of 750 acres per respondent, but were not involved in leasing farmland.

² Weighted average number of acres owned, leased, and operated for all respondents involved in leasing farmland.

Source: 1996 South Dakota Cropland Rental Arrangement Survey.

Figure 2. Distribution of leased farm land acreage by landlord type, 1996.

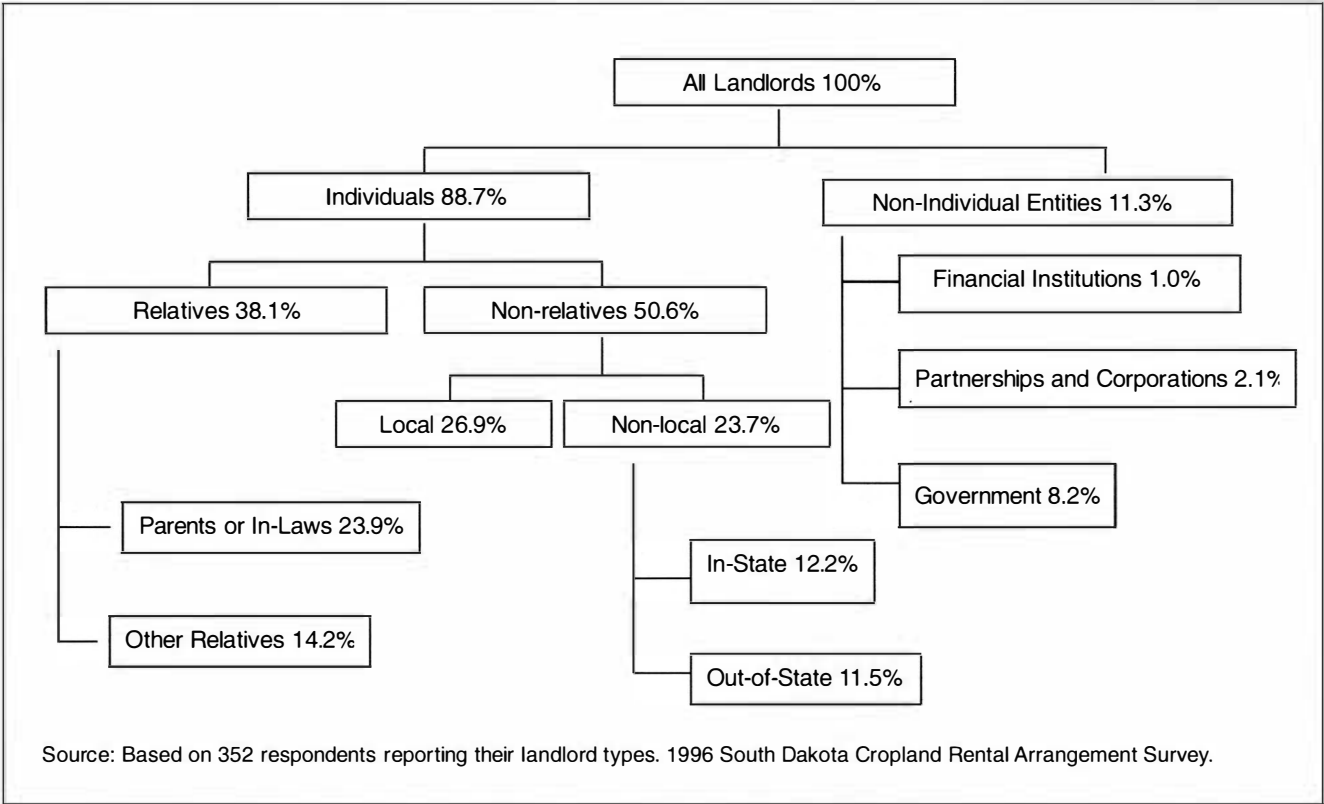


Table 11. Percentage of respondents, leases, and leased acreage by type of landlord, South Dakota, 1996.

Type of landlord	Percent of respondents a	Percent of leases	Percent of leased acres
Relatives:			
Parents or In-Laws	32.4	15.2	23.9
Other Relatives	28.1	15.6	14.2
Unrelated Individuals:			
Local	49.2	39.4	26.9
Nonlocal/In-State	16.2	9.4	12.2
Out-of-State	27.8	14.7	11.5
Partnerships/corporations:	3.4	1.6	2.1
Governmental entities:	7.1	3.2	8.2
Other	2.6	0.9	1.0
Total	166.8	100.0	100.0

a: The first column is the percent of respondents with one or more leases by type of landlord

Source: Based on 352 respondents leasing land from different types of landlords 1996 South Dakota Cropland Rental Agreement Survey.

Table 12. Average number and distribution of leases and landlords per respondent, South Dakota, 1996.

Number of Leases per Respondent	Percent of Respondents	Percent of Leases	Number of Landlords per Respondent	Percent of Respondents	Percent of Landlords
1	30.4	9.8	1	35.0	12.8
2	21.4	13.7	2	23.5	17.2
3	17.6	16.9	3	16.2	17.8
4—5	16.4	23.5	4—5	14.6	23.0
6—10	12.6	19.3	6—10	10.4	17.6
11 or more	1.7	6.8	11 or more	0.3	1.6
	100.0	100.0		100.0	100.0

Average number of leases per respondent=3.2 Average number of landlords per respondent=2.8

Source: Based on 352 respondents reporting number of leases and landlords. 1996 South Dakota Cropland Rental Arrangement Survey.

The relationship between renter and landlord is examined in Figure 2 and in Table 11. Farmers lease most of their land from individuals: about 50% from unrelated individuals; 38% from parents, in-laws or other relatives; and the remainder from governmental agencies, partnerships, corporations, or financial institutions.

Nearly half of respondents lease some of their farmland from unrelated individuals living in their local area, while almost a third lease some farmland from their parents or in-laws. Just over half (50.8%) of acres leased and 54.6% of farmland lease agreements are from these same landlords (Table 11).

Nearly 28% of respondents lease some farmland from “other relatives” while another 28% lease some farmland from “out-of-state” landlords. Nearly 26% of leased farmland and 30% of lease agreements are with these two categories of landlords (Table 11).

The total percent of respondents adds up to 166.8, which means some farmers lease land from several different types of landlords. Many part-owners lease land from others and some also lease out land to other farmers.

Above all, farmers are most likely to lease land from other individuals, especially from those living in the same locality and from relatives. Thus, family and neighbor relationships remain very important in the farmland leasing market.

By number of leases and landlords

South Dakota farmers leasing land have an average of 3.2 lease agreements with an average 2.8 landlords (Table 12). About 30% of respondents have only one lease. Thirty-five percent of the respondents reported leasing from

one landlord; 40% lease from two or three landlords, while 25% lease from four or more landlords.

Major reasons for multiple leases and more than one landlord are: (1) tenants want to expand, so they lease more land from different landlords; (2) landlords rent their land to different tenants to reduce risks; (3) some part-owners lease land from others and also rent some land to others; and (4) tenants with the same landlords could have several different leases.

It is important for tenants and landlords to have a good relationship with each other by remaining in contact through the operating year. Most respondents (77%) contact their landlords on management related issues more than once per year, with 17% contacting their landlords 10 or more times per year (Figure 3).

By formality of lease

Farmland leases are legally binding contracts that create obligations for renters and landlords. Lease contracts vary from flexible and informal agreements (verbal agreements renewable each year) to highly formal, written agreements. In this survey, 50% of respondents report using only oral leases, while 17% use only written leases (Table 13) and 33% had both oral and written leases. Overall, 83% of respondents were involved on one or more oral leases and 50% were involved in one or more written leases (Table 13).

The total percent of respondents by type of lease is 133.1, with the number of oral leases greatly exceeding the number of written leases. Renters and landlords can negotiate simple and flexible oral lease contracts with relative ease, but oral

Figure 3. Frequency of tenant-landlord contacts per year, 1996.

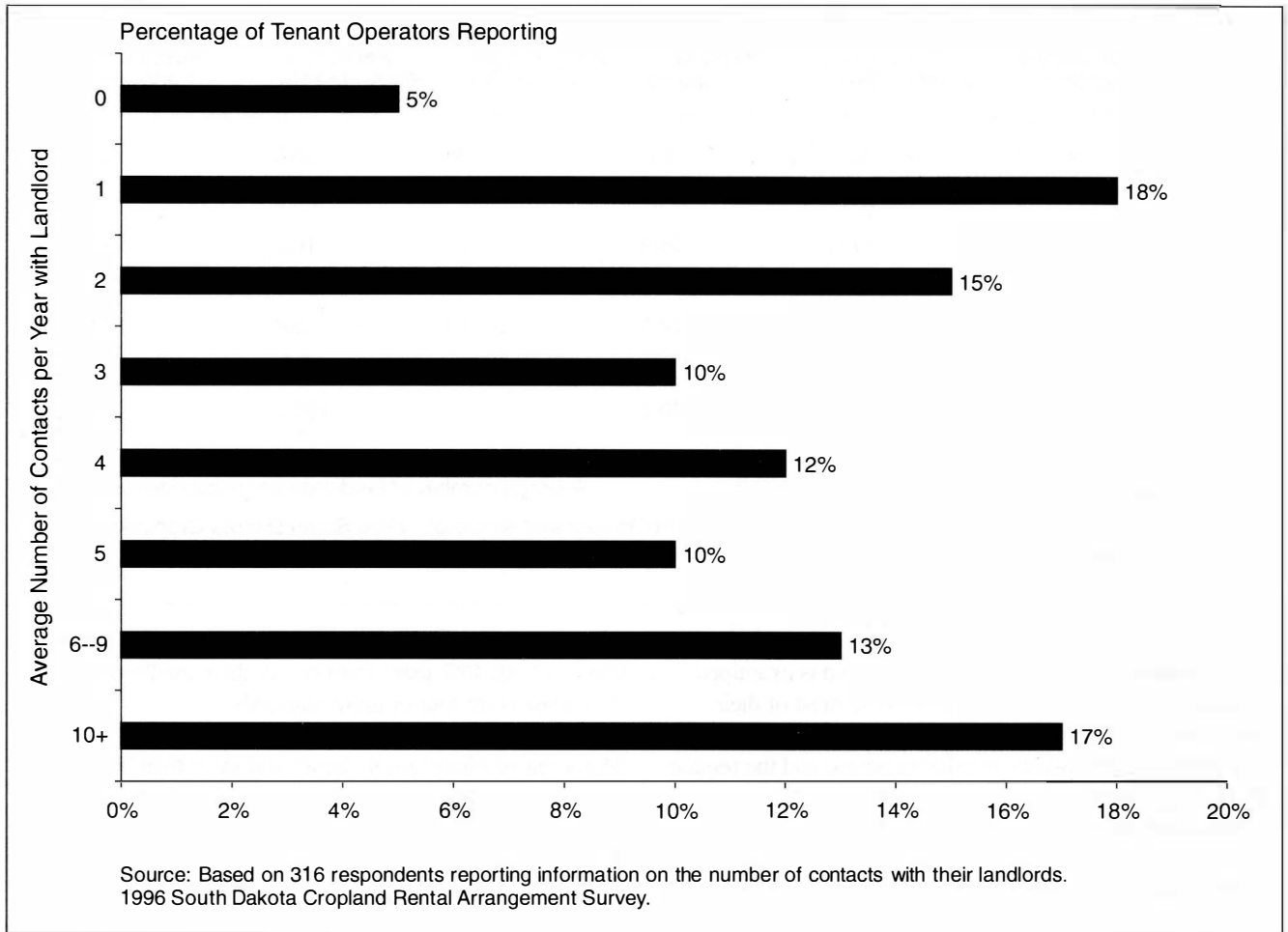


Table 13. Formality of leases: distribution by respondents, number of leased acres, and number of leases, South Dakota, 1996.

Type of leases	Percent of respondents	Percent of leased acres	Percent of leases	Average(mean) number of leases per respondent
Oral Only	49.9	30.8	37.7	2.1
Written Only	17.0	19.7	13.7	2.3
Both Oral&Written	33.1	49.5	48.6	4.1
Total	100.0	100.0	100.0	
All Oral Leases	83.0	57.5	65.4	2.0
All Written Leases	50.1	42.5	34.6	2.2
Total	133.1	100.0	100.0	

a: Percent of 309 respondents reporting one or more oral(written) lease.
Source: 1996 South Dakota Cropland Rental Arrangement Survey.

agreements may cause problems if disagreements occur. Oral agreements often occur between individuals, especially relatives, and written contracts occur more often when individuals lease land from a non-individual entity.

Respondents using both oral and written leases have an average of 4.1 leases, compared to an average of 2.1 leases for those with only oral leases and 2.3 leases for those with only written leases.

In oral agreements, the average number of leased acres is 456 acres, suggesting that oral leases occur more often when the number of leased acres is relatively small. Landlords and tenants usually sign written leases for much larger tracts.

By type of lease

Almost all lease agreements are crop-share or cash leases (Table 14). Based on survey responses, 42.7% of total leases are cash leases for cropland, 21.6% are cash leases for pasture, and 34.2% are crop-share leases. Only 1.5% of the leases are other arrangements. The average number of acres in pasture leases (664 acres) is considerably greater than the average number of cash or share leases for cropland. Nearly 43% of respondents lease some pastureland, while 94% lease some cropland.

Distribution of acres by type of lease varies considerably by region. Statewide, 30% of respondents' leased acres are in crop-share leases, 37.3% are cash for crop or hay produc-

tion, 32.3% are cash for pasture, and 0.5% are in other types of leases (Table 14).

Cash leases for pasture and rangeland are concentrated in western South Dakota but are only 10 to 14% of acres leased in eastern South Dakota. Crop-share leases exceed 40% of leased acres in the south-central and all eastern regions. Cash leases for crop or hay land exceed 40% of leased acres in the central, north-central, and all eastern regions of South Dakota. Similar proportions of acres in eastern South Dakota are in cash and share leases for crop or hay land (Figure 4).

Comparisons of South Dakota cropland share and cash leases

Thirty nine percent of farmer respondents leasing farmland had a combination of crop-share leases and cash leases, 25% only had crop-share leases, and 36% had only cash leases. Overall, about 66% of renters had at least one crop-share lease, while 75% of respondent renters had one or more cash leases for crop production (Figure 5).

Basic characteristics of crop-share and cash leases

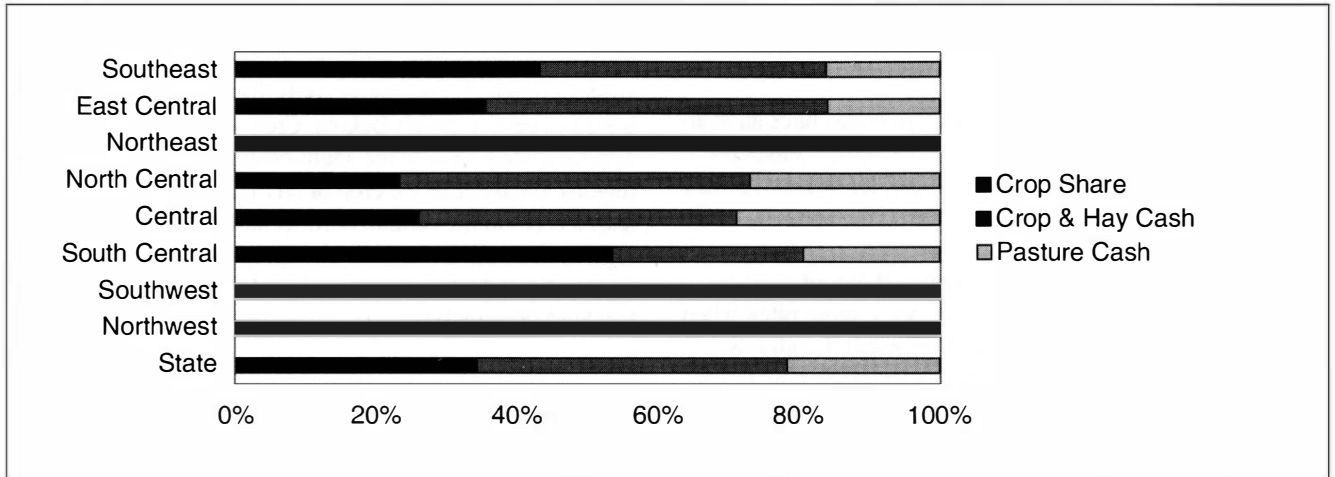
Basic characteristics of crop-share and cash leases for crop or hay production in South Dakota are shown in Table 15, based on detailed information reported by 208 respondents

Table 14. Distribution of total reported leases and average reported acres in South Dakota, by type of lease, 1996.

Type of Lease	Number of Leases		Number of Acres	
	Number per Type	Percent of Total	Average per Type	Percent of Total
Cash Crop/Hay	461	42.7	461	37.3
Cropshare	369	34.2	438	30.0
Pasture	233	21.6	664	32.2
Livestock Share	6	0.5	122	0.2
Other	11	1.0	163	0.3
Total	1080	100.0		100.0
Summary	Total number of respondents 352 Average number of leases per respondent 3.1 Total number of leases 1080 Average number of acres per lease 283 Average number of acres leased per respondent . . 868			

Source: 1996 South Dakota Cropland Rental Arrangement Survey.

Fig 4. Distribution of Farmland by Type of Lease, Total Farmland Leases, 1996.



with crop-share leases and 234 respondents with cash leases. Respondents with crop-share leases rented in an average of 438 acres; respondents with cash leases rented in an average of 461 acres for crop or hay production. Since many respondents reported multiple numbers of cash or share leases, the average number of acres per lease (283 acres) was consider-

ably lower. The average size of the “most important” lease reported in detail by respondents was 265 acres per crop-share lease and 350 acres per cash lease.

Farm operators with crop-share leases are much more likely to use verbal agreements than those with cash leases, 81% vs. 57%. About 33% of respondents view their lease as a

Figure 5. Distribution of tenant operators by type(s) of cropland leases used, South Dakota, 1996.

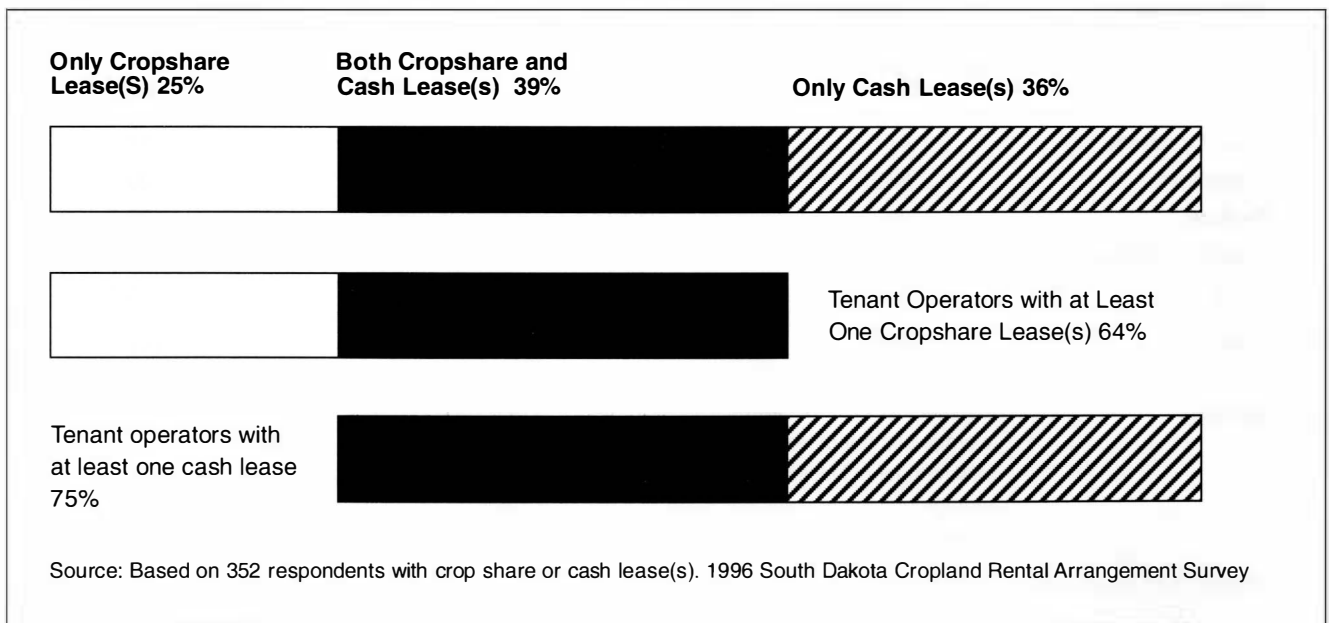


Table 15. Comparisons of cropland share and cash leases by key characteristics, South Dakota, 1996.

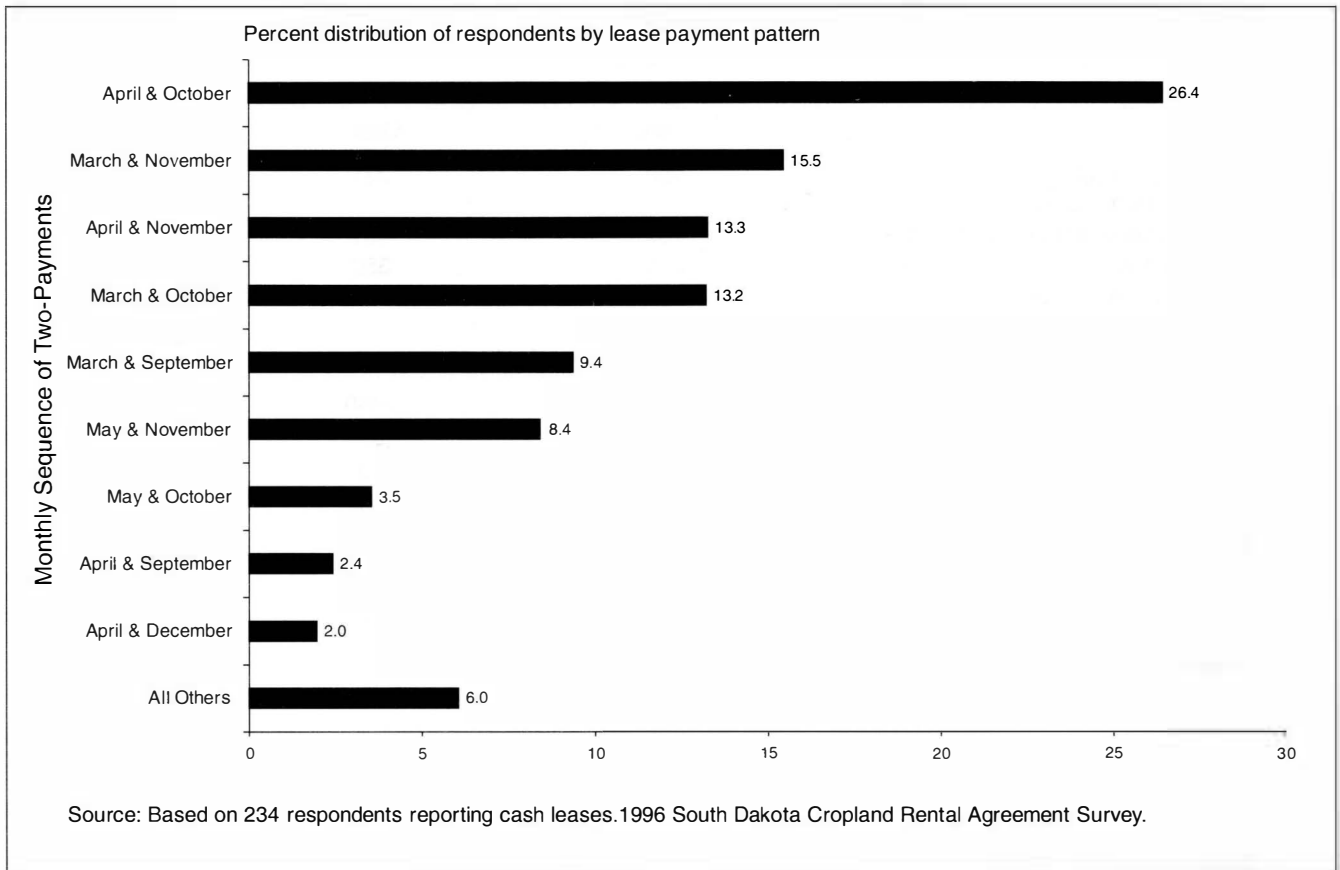
	Type of Lease:	
	Share	Cash
Number of Respondents:	208	234
Average Number of Acres:		
per respondent by type of lease	438	461
per lease	265	350
Average length in years	13.7	11.7
The Lease is:	Percent of respondents per lease type	
	Share	Cash
Oral	81	57
Written	19	43
Annual	67	63
Multi-year	33	37
Lease includes forage use after crops are harvested	51	40
Tenant-landlord share of output in cropshare lease is:		
50-50	8.2	
60-40	24.4	
67-33	65.4	
75-25	2.0	
Cash lease payment is:		
Annual		38
Semi-annual		59
Quarterly		3
Changes in last 5 years^a:	Percent of respondents reporting changes	
	Share	Cash
Land ownership	10.1	12.4
Cash to crop share rent	1.3	n.a.
Share to cash rent	n.a.	12.3
Change in cash lease rate	n.a.	75.7
Change in the inputs shared	4.1	n.a.

^a Respondents were asked the following question: During the past five years (or the time you have leased this tract if shorter) has

- a. land ownership changed?
- b. the lease changed from cash to share rent?
- c. the lease changed from share to cash rent?
- d. there been an increase (or decrease) in cash rent?
- e. change in the inputs shared?

Source: Based on 352 respondents reporting cropshare or cash lease(s). 1996 South Dakota Cropland Rental Agreement Survey.

Figure 6. Most typical two-payment patterns of cash leases for cropland, South Dakota, 1996.



multi-year lease instead of annually renewable.⁸ Regardless of lease type, most leases have been in effect for or annually renewed for many years. Average duration of leases is about 13.7 years under a crop-share lease and 11.7 years under a cash lease (Table 15).

Fifty percent of crop-share leases and 40% of cash leases for cropland have provisions for the tenant to have forage use (grazing on stalks or harvested forage) after the grain is harvested. Most of the leased tracts with forage use also have permanent fencing and a livestock water source.

Almost all of the crop-share leases are one of the following tenant-landlord shares of output: 2/3-1/3 share, 3/5-2/5 share, 1/2-1/2 share, or 3/4-1/4 share. Statewide, the most frequently used share arrangement (65.4% of the total) was a 2/3-1/3 tenant-landlord share of output. Tenant-landlord output share of 3/5-2/5 was also common, at 24.4% of total share leases. Nearly 8% of crop-share leases were 1/2-1/2 output share and only 2% were 3/4-1/4 share of output. Six percent of crop-share leases had a supplemental cash payment for such purposes as use of forage, farm buildings, and other items.

Most crop-share leases include sharing of government payments in the same proportion as output; however, 10% of

crop-share respondents reported government payments were shared in a different proportion than their crop output share.

When cash leasing, 59% of renters made cash payments twice per year, 38% paid their total rent once a year, and 3% reported other arrangements. The most common two-payment pattern was an initial payment in March or April and a second payment in October or November (Figure 6).

In the previous 5 years, 10.1% of respondents with crop-share leases and 12.4% with cash leases changed their landlords. Only 1.3% of the respondents changed from a cash lease to a crop-share lease, while 12.3% changed from a share lease to a cash lease.

Cash rental rates changed in the previous five years; 75.7% of respondents adjusted their cash rate at least once in a specific lease. Crop-share lease arrangements were relatively constant; only 4.1% of the operators modified shares of output in the last 5 years (Table 15). One main reason for this difference is that net return in a crop-share lease adjusts automatically to changes in yields, costs, or output prices.

Crop-share leases

Sixty-four percent of respondent tenants were involved in one or more crop-share leases. These tenants share-lease

⁸ From a legal standpoint, all oral leases for farmland rental are annual leases while written leases may be specified for one or more years. However, many respondents with oral leases viewed their lease as a multi-year lease.

Table 16. Tenant's share of non-irrigated crop output for respondents to South Dakota cropland leasing survey by region and cropping pattern, 1996.

	Tenant's share of crop output			
	1/2	3/5	2/3	3/4
South Dakota	8.2	24.4	65.4	2.0
Region^a				
Southeast	0	49	51	0
East Central	18	36	44	0
Northeast	11	8	81	0
North Central	5	0	81	14
Central	7	0	85	7
Western	0	9	91	0
Cropping Pattern^b				
corn/soybeans	8	45	47	0
corn/soybeans/grain	7	13	80	0
grain/corn/soybeans	7	0	93	0
wheat/grain	11	7	69	13

^a See Figure 1 for map and description of regions. In this table, the western region includes all counties west of the Missouri River or the northwest, southwest, and south central regions.

^b Major cropping patterns on the leased tract are:
 corn/soybeans: corn and soybeans are the only crops raised.
 corn/soybeans/grain: corn, soybeans and other crops (wheat, oats, barley, sunflowers, etc.) are raised.
 grain/corn/soybeans: grains (wheat, oats, barley, etc.) are raised with corn or with soybeans.
 wheat/grain: wheat and other small grains are raised, but no corn or soybeans are grown.

Source: 1996 South Dakota Cropland Rental Arrangement Survey.

an average 438 acres, with 265 acres in their most important crop-share lease. Crop or hay production is the land use for 96% of the share-lease acres. Twenty percent of these crop-share leases also include shares of hay production.

Crop output shares

The 2/3-1/3 crop-share lease is the dominant lease in most counties of South Dakota (Table 16), reported in more than 80% of crop-share leases in the northeast region and in all regions of central and western South Dakota. It is also the output share of 51% of crop-share leases in the southeast region and 44% of crop-share leases in the east-central region.

The 3/5-2/5 crop-share lease is also important in the southeast and east-central regions and is reported for some leases in the northeast and western regions. The 1/2-1/2 output share is reported in 8.2% of crop-share leases, primarily those located in eastern and central regions of South Dakota.

The proportion of 1/2-1/2 share leases is similar by cropping pattern, with wheat/grain leases reported in the north-central and central region, while corn/soybean leases were reported in eastern South Dakota. The 3/5-2/5 crop-share

lease is prominent on tracts where only corn and soybeans were grown (Table 16).

The 2/3-1/3 crop-share lease is the overwhelming favorite on leased tracts where wheat or other small grains are raised, with or without corn or soybeans in the rotation. Renters received 3/4 of the crop output in only 2% of crop-share leases. These leases were located on small grain and wheat tracts in the central and north-central regions.

In almost all cases, all non-irrigated crops raised on the same leased tract were shared in the same proportion. However, in some leases hay output shares were different (usually higher) than other crop output shares.

Sharing of crop input expenses

Most (80%) crop-share lease respondents report the tenant and landlord share expenses for one or more variable inputs, with number and type of input expenses varying by region, output share, and cropping pattern. If an input expense is shared it is almost always (98% of reports) shared in the same proportion as output is shared.

Fertilizer expenses are the most commonly shared input expense, followed by herbicide, crop drying, and insecticide

Table 17. Proportion of respondents reporting shared inputs on crop share leases by region, output share, and cropping pattern; South Dakota, 1996.

Region	Seed	Fertilizer	Herbicides	Insecticides	Chem. Appl.	Harvest	Hauling	Drying
percent of share leases reporting landlord-tenant share of input								
South Dakota	13.0	78.1	58.5	41.4	21.9	3.6	2.8	46.0
Southeast	13	89	55	32	31	0	0	30
East Central	22	89	68	51	16	0	2	52
Northeast	11	87	72	51	17	11	2	60
North Central	17	65	48	43	26	12	12	56
Central	0	41	44	28	14	0	7	48
South Central	0	77	50	35	28	0	0	40
Western	0	21	25	20	25	0	0	11
Output Share:								
Tenant-Landlord								
50-50	66	93	85	67	22	34	11	67
60-40	14	95	78	59	27	0	0	50
67-33	7	75	52	35	20	1	2	44
Cropping Pattern:								
corn/soybeans	15	89	66	48	22	0	0	43
corn/soybeans/grain	20	85	64	40	17	9	4	64
grain/corn/soybeans	6	75	54	37	28	6	6	46
wheat/grain	9	39	34	29	21	0	0	29

Seed, fertilizer, herbicide, chemical application, and harvesting were reported as crop expenses in almost all share leases. However, insecticide expense is reported in only 74% of share leases and crop drying expense is reported in 67% of share leases. See Table 16 for description of cropping pattern.

Source: 1996 South Dakota Cropland Rental Arrangement Survey.

expenses (Table 17). Fertilizer expenses are shared by at least 93% of respondents reporting a 3/5-2/5 or 1/2-1/2 crop-share lease and 75% of respondents reporting a 2/3-1/3 share lease in South Dakota. Most respondents raising corn and soybeans share fertilizer expenses with their landlord.

Herbicide expenses are shared in 58.5% of crop-share leases. while insecticide expenses are shared in 41.4% of crop-share leases. The major difference is due to nearly all respondents reporting herbicide use, but only 66% of respondents reporting insecticide use on their leased land. Herbicide expenses were shared in most 1/2-1/2 and 3/5-2/5 crop-share leases and in 52% of 2/3-1/3 leases. Herbicide expenses were shared in nearly 66% of crop-share leases in eastern South Dakota and in crop leases where corn and soybean production is reported.

Insecticide expenses are shared in 66% of 1/2-1/2, 60% of 3/5-2/5, and about 33% of 2/3-1/3 crop-share leases. Sharing of insecticide expenses was more likely to be reported by farmer respondents in the east-central, northeast, and north-central regions and by farmers including corn or soybeans in their cropping pattern.

Chemical application expenses are shared in 22% of crop-share leases with relatively few differences by region, output share, or cropping pattern. In all likelihood, if chemicals (fertilizer, herbicides, or insecticides) were a shared expense and chemical application was hired, the application costs were probably a shared expense.

Crop drying expenses are shared in 46% of crop-share leases and were likely to be shared in most regions of eastern and central South Dakota where corn is raised on the leased tract.

Seed costs are shared in 66% of 1/2-1/2 crop-share leases but were infrequently shared in other leases. Harvesting expenses were shared in nearly 33% of 1/2-1/2 crop-share leases and almost never shared in any other lease agreement. Hauling expenses were seldom shared.

Crop input expenses are more frequently shared on leased tracts where corn and/or soybeans are grown and the tenant's share is 1/2 or 3/5 of the crop output. By contrast, crop-share leases for wheat and small grains (usually 2/3-1/3 tenant-landlord share) have a lower incidence of shared

costs. For these leases, fertilizer expense is more frequently shared than are other input expenses.

“Selected variable input expenses (fertilizer, herbicide, insecticide, and chemical applications) are shared more frequently than most other inputs and are closely related to expected yield levels. Consequently, landlords and tenants have considerable interest in appropriate input application levels. . . . In general, leases for crops with higher per-acre production costs and raised on more productive farmland are more likely to include landlord sharing of variable input expenses.” These quotes from the 1986 farmland rental survey report (Peterson and Janssen, 1988, pp. 11) are fully applicable to the 1996 survey results.

Changes in crop-share leasing, 1986 to 1996

Major changes that seem to have gradually occurred between 1986 and 1996 are:

- (1) Lower incidence of crop-share leases in 1996 compared to 1986. In 1986, more crop-share leases and leased acres were reported than cash leases for crop/ hay production. In 1996, more cash leases and acres cash leased were reported.
- (2) Greater incidence of input cost sharing in 2/3-1/3 and 3/5-2/5 crop-share leases. This appears to be directly related to the increase in corn and soybean acreage and relative decline of wheat or small grain acreage in all regions of central and eastern South Dakota.

Stability, change, and flexibility in crop-share leases

Crop-share leases have built-in changes in net returns to landlords and tenants as yields, prices, and input costs change over time. This is a major reason that relatively few

share-lease respondents (4%) reported a change in the output share or a change in the number and type of specific inputs that are cost-shared by renter and landlord.

The average crop-share lease has been in effect for 13.7 years, 75% for more than 5 years, and one of every seven more than 25 years! During the preceding 5 years, only 1.3% of respondents' crop-share agreements had been converted from a cash lease. The most substantial change is a change in land ownership in 10% of the crop-share leases in the preceding 5 years.

The combination of mostly oral leases (81% of respondents' crop-share leases) and relatively frequent contacts between renter and landlord also contributes to flexibility in crop-share leases.

Cash leases for cropland

Three-fourths of farmer respondents reported one or more cash leases for crop production. These farmers cash-lease an average of 461 acres with 350 acres reported for their most important lease. The overall agricultural land use of the cash-lease acres was 84% in cropland and 16% in pasture. Crop production (including hay) was the only land use in 66% of these cash leases, while some pastureland was included in 33%. The incidence of cash leases including crop, hay, and pastureland was much higher in western and central regions of South Dakota.

Trends in cropland cash rental rates, 1991 to 2001

Statewide and regional average cash rental rates for non-irrigated cropland for 1991, 1996, and 2001 are shown in Figure 7. These average cash rental rates are obtained from the annual agricultural land market survey of land values and cash rental rates conducted by the SDSU Economics

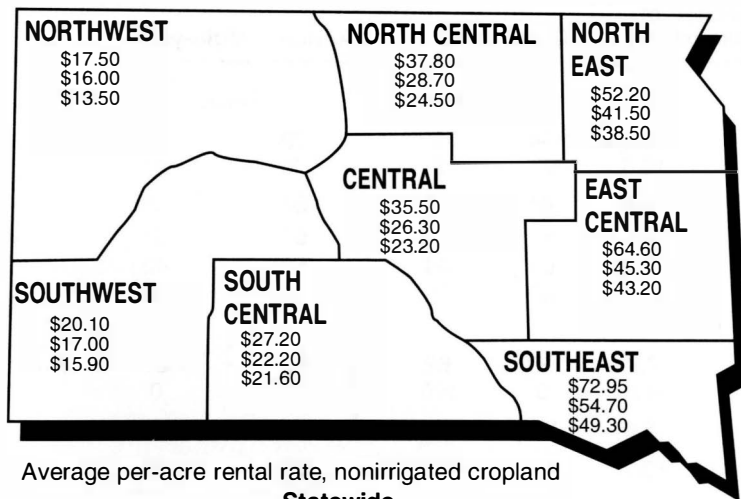
Department (Janssen and Pflueger, 2001). The middle time period corresponds with the 1996 survey period, while the other time periods show 5-year changes prior to and after 1996.

Major differences in cash rental rates occur by region and over time. In each time period, cash rental rates per acre are highest in the southeast region, followed by cash rental rates in the east-central and northeast regions. These three cropland-intensive eastern regions contain 45% of South Dakota's cropland.

The statewide average cash rental rate for cropland is between the per-acre cash rental rates shown for the north-central and northeast regions. Cash rental rates continue to decline from the north-central to the central and south-central regions and are lowest in the northwest and southwest regions (Figure 7).

For 1996, the statewide average cash rental rate for cropland was \$35.75 per acre, varying region-

Fig 7. Average cash lease rates for nonirrigated cropland by region, South Dakota, 2001, 1996, and 1991.



Average per-acre rental rate, nonirrigated cropland

	in	Statewide
Top:	in 2001	\$43.35
Middle:	in 1996	\$35.75
Bottom:	in 1991	\$32.60

Source: Janssen and Pflueger (2001).

ally from a low of \$16 to \$17 in the northwest and southwest regions to \$28.70 in the north-central region and a high of \$54.70 per acre in the southeast region (Figure 7). Similar relationships, but different cash rental rates, occurred for regional average cash rental rates in 1991 and in 2001.

Systematic variation in cropland cash rental rates is primarily related to major differences in agricultural land productivity among regions and changing cropping patterns across the state.

From 1991 to 2001 cropland cash rental rates increased in all regions. Statewide, cropland cash rental rates increased at an average annual rate of 3.8%. Higher annual rates of increase (+4.0% to 4.4%) were in the southeast, east-central, north-central, and central regions. Lower rates of annual average increases in cash rental rates (+2.0% to 2.6%) occurred in the south-central and western regions. Cash rental rate increases in the northeast region (+3.1% annual rate) were lower than in other eastern regions, due, in part, to extremely wet conditions and high water tables for several years for so many farms in this region.

Increased rental rates in the eastern and central regions of South Dakota were closely related to: (1) a shifting crop mix from less profitable small grains to more profitable soybeans and corn in the crop rotation, (2) increased yield trends for corn and soybeans compared to yields trends for small grains, and (3) the impact of federal farm program provisions from 1996 to 2002 that favored soybeans and corn relative to wheat, barley, and oats.

Cropland rental rates increased faster from 1996 to 2001 compared to the preceding 5 years of 1991 to 1996. For example, statewide average rates increased at an average annual 5.8% in the 1996-2001 period compared to an average annual rate of only 1.9% from 1991 to 1996. The greatest difference between the two time periods occurred for cash rental rates in the east-central region with annual rates of increase of 7.4% from 1996-2001 compared to only 0.9% per year from 1991-1996.

Cash rental rates are often used as a proxy for net returns to land. The ratio of gross cash rental rate to cropland value in South Dakota varied from 7.6% to 8.0% during the 1991 to 2001 time period. Thus, increases in cash rental rates result in increased profits during the 1991 to 2001 period led to increases in agricultural land values in the same period. The more rapid increases in cash rental rates and land values from 1996 to 2001 were directly related to crop price or government payment benefits that were quickly capitalized into land rents and values (Janssen and Pflueger, 2001).

Stability, change, and flexibility of cash leases

The average duration of cash leases was 11.7 years: 66% had been in effect for more than 5 years, and 10% more than 25 years. During the preceding 5 years, the cash rental rate had been changed (mostly increased) in 75.7% of the cash lease agreements. During the preceding year (1995-1996) the cash rental rate was changed in only 9.4% of the leases with an average rate increase of \$4.50, or +13.4%. The average number of years between rental rate

Table 18a. Characteristics of crop share leases by type of landlord, South Dakota, 1996.

Characteristics of most important or most typical share leases							
Landlord Type	Average size		Duration of lease (years)	Formality of leases		Length of lease contracts	
	Mean	Median		Oral	Written	Annual	Multi-year
Relatives:				Percent		Percent	
Parents or in laws	315	280	10.6	94	6	70	30
Other Relatives	252	160	15.5	91	9	78	22
Unrelated Individuals:	194	160	13.5	84	16	67	33
Local	194	160	13.5	84	16	67	33
Non-local/In-state	288	160	14.3	66	34	58	42
Out-of-State individual	276	160	17.9	67	33	61	39
Institution:							
Financial	226	120	7.9	38	62	39	61
Partnership/Corporation	220	120	8.5	0	100	100	0
Other:	240	240	18.0	100	0	100	0
Total	265	160	13.7	81	19	67	33

Source: Based on 208 respondents with crop share leases. 1996 South Dakota Cropland Rental Arrangement Survey.

changes on the same lease varied from 5.8 years in the northwest to nearly 9 years in the northeast. It appears that cash rental rates are flexible over time but are often not adjusted on specific cash leases until major rate changes are necessary.

Stability of lease arrangements may be affected when a different landowner takes over. Nearly 12% of the renters cash-leased the same land from different landlords within the previous 5 years. Also, 12% of cash leases had been converted from a crop-share lease. This change from share to cash lease more often occurs when there is also a change in landlord.

Characteristics of crop-share and cash leases by type of landlord

Several characteristics of crop-share leases and cash leases are related to landlord type. Data in Tables 18a and 18b show some basic characteristics of the most important (or most typical) share lease and cash lease reported by respondents. Statewide, landlords share-leased an average of 265 acres and cash-leased an average of 350 acres to tenants. However, the median size of tract in a cash or share lease was 160 acres.

Parents or in-laws rented the most acres to their children in both types of leases, an average of 315 acres in a share lease and 660 acres in a cash lease. However, the median number of acres leased by parents by type of lease was similar; 280 acres in a share lease and 252 acres in a cash lease. The

average amount of land leased from other relatives was similar for crop-share and for cash leases, 252 vs. 270 acres (Tables 18a, 18b).

A majority of leases and half of acreage leased by respondents are from unrelated individuals. The average amount of land leased varied by the landlord's distance from the farm and by type of lease.

Statewide, the average duration is 13.7 years for share leases and 11.7 years for cash leases. For both, the shortest average duration were leases from institutions (financial, partnerships, and corporations) while the longest duration were leases with unrelated individuals and "other relatives."

Most crop-share tenants (81%) and 57% of cash-lease tenants use oral leases. For both share and cash leases, oral agreements are more likely to occur with parents, in-laws, and other relatives compared to leases from unrelated individuals or from institutions. A majority of cash leases and two-thirds or more of share leases with unrelated individuals were oral lease agreements. However, most leases with financial institutions and all leases with partnerships and corporations were written.

Economic evaluation of farmland leasing arrangements

Now we turn to an economic evaluation of farmland leasing arrangements. First, general characteristics of cash and crop-share leases and their major advantages and disadvantages

Table 18b. Characteristics of cropland cash leases by type of landlord, South Dakota, 1996.

Characteristics of most important or most typical cropland cash leases								
Landlord Type	Average size		Duration of lease (years)	Formality of leases		Length of lease contracts		
	Mean	Median		Oral	Written	Annual	Multi-year	
Relatives:				Percent		Percent		
Parents or in-laws	660	252	9.4	76	24	68	32	
Other Relatives	270	160	14.9	65	35	73	27	
Unrelated Individuals:								
Local	330	170	10.7	55	46	66	34	
Non-local/In-state	323	160	16.1	60	40	55	45	
Out-of-State individual	192	160	11.3	52	48	73	27	
Institution:								
Financial	492	240	5.8	36	64	20	80	
Partnership/Corporation	154	145	5.0	0	100	0	100	
Other:	295	395	7.0	0	100	0	100	
Total	350	160	11.7	57	43	63	37	

Source: Based on 234 respondents with cash leases for cropland. 1996 South Dakota Cropland Rental Arrangement Survey.

are discussed. Next, a more detailed economic analysis of crop-share leasing arrangements uses the standard economic contributions approach to evaluation of tenant-landlord share agreements. Third, respondents' assessments of their leases is discussed. Finally, we discuss the forces of change and stability that impact the evolutionary changes in farmland leasing.

Advantages and disadvantages of cash leases and share leases

Cash leases and crop-share leases each have some advantages and disadvantages (Johnson et al., 1996, 2001; Outlaw, 2001).

Cash leases

Cash leases are widely used for crop, hay, and pasture land and are popular with landlords and renters for many reasons. Cash rents are easy to calculate and dollar amounts of payments (returns) are known in advance.

For landlords, the major advantages of cash leases are: (1) landlords receive guaranteed income for the contract period as long as the tenant remains financially solvent; (2) landlords are free from the management responsibilities of the farming operation; (3) landlords have no dollar investment tied up in production costs; and (4) landlords have no need for concern over the accurate division of crops and expenses. Retired landlords may also prefer cash leasing to avoid "materially participating" in the farm business, thereby endangering some of their social security benefits.

Advantages for renters are: (1) the renters may operate the property freely, except as limited by the lease agreement or by common law; (2) the renters receive full benefits from their management skills; and (3) renters have the potential to achieve higher dollar returns than crop-share leasing as they bear more production and marketing risk.

Disadvantages also occur for both landlords and tenants. Cash-rent landlords assume the risk that their tenant(s) will be unable to make rental payments, unless all of the payment is made in advance. Landlords often forgo some economic benefits in high production years in return for accepting less risk. Tenants endure the full risk of poor crop yields and/or low crop prices and may find owners reluctant to provide needed farm improvements.

Cash rental payments are closely related to the level of and changes in farmland market values. Farmland market values are fundamentally derived from current net returns and expected changes in net returns. Cash rental payments minus property taxes and landlord maintenance expenses are a close approximation of current net returns to farmland.

Although wide variation in cash rental rates exists across South Dakota, the associated rent-to-value ratios for crop-

land are similar. This relative consistency of rent-to-value ratios (which represent a return to land) suggests a well functioning capital market for South Dakota farmland. Furthermore, cash rental rates, in relation to farmland values, maintain a fairly consistent spatial pattern over time, even though farmland rental markets and purchase markets are mostly local in nature.

Share leases

Share rental arrangements provide a mechanism for sharing production risks between landlords and renters.

From the landlords' perspective, share leases require their involvement in crop production and conservation decisions. Landlords benefit from a superior crop year associated with higher yields and commodity prices and have a greater degree of control over what is produced and how it is produced. However, if low yields or financial risk associated with low prices occur, landlords bear at least a portion of the production and financial risk. An important disadvantage for some landlords is in assuming a share of the production costs. Another source of risk for some landlords (especially absentee or elderly landlords) is the verification of yields on which their share rental payments are based.

Renters share the production and financial risk with the landowner. In addition, they are relieved of some of the financial burden of ownership as property tax, insurance, and debt-servicing cash costs are often higher than net rental payments. However, disadvantages for renters include (1) losing some managerial freedom, and (2) sharing benefits from a "good year" and the results of superior management with the landowner.

From an economic standpoint, the division of outputs and inputs in a share lease should reflect relative economic contributions of the landlord and tenant. These contributions not only include purchased input costs and actual and implicit costs of labor and other specialized inputs (land, machinery, improvements) contributed by each party. If these conditions are met and the renter and landlord negotiate the same output shares for all competing crops, then crop-share leases meet short-run economic efficiency conditions and equitable distribution of receipts and costs (Heady, 1952).

Economic evaluation of typical crop-share leasing agreements

The 1996 South Dakota survey revealed substantial variations in dominant output shares and in the structure of input cost sharing by region and cropping pattern, suggesting differences in the relative contributions of landlords and tenants. Therefore, an economic contributions approach was used to analyze 16 typical crop-share lease arrangements based on share lease data provided by 208 farm operators in the survey.

Yields were based on the survey data set and from the average of 1996-2000 yields in specific regions reported by the South Dakota Agricultural Statistics Service. Cost of production data were obtained from SDSU Economics Department crop budget series for 2001 compiled by Dr. Don Peterson. Cash rental rates were derived from the survey conducted by Janssen and Pflueger (2001).

Key assumptions and sample budget

Typical tenant/landlord shared outputs and inputs were assumed for each region and crop. Input costs not shared were assigned as appropriate to the tenant or to the landlord.

1. Costs reflect economic conditions for 2001, not 1996. Thus we are examining the efficiency and equity of lease arrangements specified in 1996 for 2001 conditions.

2. Machinery operations and associated charges for machinery ownership, operations, and labor charges, crop insurance expense, along with seed, fertilizer, and chemical use rates are from specific baseline budgets for each crop (Peterson, 2001). Slight modifications in seed and fertilizer rates and costs were assumed if yields were greater than those specified in the baseline budgets.

3. Conventional tillage (chisel plow and disk) budgets are used except for one no-till budget for wheat.

4. Overhead costs are added to the budget and assumed to be 6% of the sum of purchased inputs, machinery use, and labor costs.

5. The management charge is 7% of expected revenues for each crop and is shared in the same proportion as output shares of tenants and landlords, respectively.

6. A land charge is equal to the cash rental rate for 2001. It represents the economic contribution of the land, assuming a cash lease is the alternate method of leasing land.

An example of how crop budgets are adapted to examine the relative contributions of tenant and landlord in a share lease agreement is shown in Table 19. This budget shows the cost structure of producing 105 bushels of corn per acre of cropland in eastern South Dakota. The tenant-landlord output share is 3/5-2/5 or 60-40.

According to data in this table, total costs per acre are \$243.87. Tenants assume all seed expense, machinery ownership and operation costs, labor costs, capital charges, and overhead costs, which total \$93.84. Tenants and landowners share fertilizer, herbicide, crop drying, and crop insurance

Table 19. Sample crop enterprise budget for eastern South Dakota, 105 bushel corn, 60-40 tenant-landlord share.

Item	Tenant Share	Dollar contribution		
		Tenant	Landlord	Total
Land change	0	0.00	65.00	65.00
Machinery ownership	100	10.83	0	10.83
Machinery operation & labor	100	18.54	0	18.54
Trucking	100	9.00	0	9.00
Custom harvest	100	23.50	0	23.50
Seed	100	20.14	0	20.14
Fertilizer	60	14.77	9.85	24.62
Herbicide	60	11.92	7.94	19.82
Crop drying	60	10.71	7.14	17.85
Crop insurance	60	4.80	3.20	8.00
Capital change	100	5.52	0	5.52
Crop overhead	100	6.31	0	6.31
Management change	60	8.82	5.88	14.70
Total costs		\$144.86	\$99.01	\$243.87
Tenants contribution		59.4%		
Landlords contribution			40.6%	

Source: Costs modified from baseline SDSU crop budgets developed by Dr. Donald Peterson, Extension Economists and reported in 2001 Estimated Costs of Production for Spring Crops. Baseline budget for sample crop enterprise is NE-401-2300, NECORN, conventional tillage.

expenses, which total \$70.33. In this example, the management contribution of \$14.70 is also split between the tenant and landlord in the same proportion as the output share. The landlord assumes the land charge, which is \$65 per acre.

The estimated economic contribution of the tenant and landlord (59.4% and 40.6% of total economic costs, respectively) is very close to their respective 60–40 shares of output.

Efficiency and equity tests of crop-share lease arrangements

Detailed information about 16 typical crop-share lease arrangements by region and crop enterprise is given in Table 20. In this section, the lease agreement is considered equitable if the tenant–landlord input cost contribution is within three percentage points of the respective share of output of each.

Two typical 60:40 share lease agreements and three 50:50 share lease agreements were evaluated for medium and high productivity cropland in eastern South Dakota.

For corn production averaging 105 bushels per acre, the input cost contribution is very close to the 60:40 output share if fertilizer, herbicide, crop drying, and crop insurance expenses are shared. For corn production at 125 bushels, the input cost contribution is very close to the 50:50 output share if seed, fertilizer, herbicide, crop drying, and crop insurance expenses are shared.

However, if the landlord also shares harvesting costs and chemical application costs, the landlord's cost contribution is 6.5 percentage points higher than his or her share of output.

For soybean production, there is a considerable difference between the tenant's input cost contribution (44.1%) and his share of output in a 50:50 share lease. A similar situation occurs in a 60:40 soybean lease in eastern South Dakota, where the tenant contributes 56.3% of the total input expenses but receives 60% of the output and value of production. A likely reason is that typical crop-share leases have not fully adjusted to the rapid increase of soybean production.

Most crop-share leases in north-central, northeast, and central regions in South Dakota are 2/3-1/3 share leases, with considerable variation in the incidence of sharing specific input costs.

For corn production at 85 bushels per acre, the input cost contribution is nearly identical to the 2/3-1/3 output share when fertilizer, herbicide, and crop insurance expenses are shared. However, if the landlord also shares crop drying and chemical application expense then the landlord contributes a larger share of input costs (36.5%) than received in his or her share of output (33.3%).

For other 2/3-1/3 crop leases in these regions, the landlord also contributes a higher share of input costs than received in share of output in typical share leases for soybeans, spring

wheat, and grain sorghum. The share of output received and input cost contributions are very close to each other in typical share leases for sunflowers or oats.

Some wheat leases are 50:50 share agreements with cost sharing for many inputs including seed, fertilizer, chemicals and their application, and crop insurance. For a 50:50 share lease for spring wheat, with an estimated yield of 45 bushels per acre, the input cost contribution and output shares for tenants and landlords are almost the same. However, the same lease agreement for winter wheat shows the tenant contributing a higher input cost share than his share of output.

In western South Dakota, the tenant's input cost contribution for grain sorghum is similar to output share. In a spring wheat enterprise, there is only a slight difference between the tenant's input contribution and his output share. Overall, the budgets of non-irrigated crop-share lease arrangements in South Dakota indicate shared costs closely reflect output shares for sunflower, oats, and almost half of the corn and spring wheat budgets. However, the tenant's input cost contribution is considerably lower (from 3.2 to 6.8 percentage points) than his output share for all soybean budgets and some corn and grain sorghum budgets, while the tenant's input cost contribution is 3.4 percentage points higher than his output share in the winter wheat budget. These findings suggest that there is some pressure (usually by landlords) to renegotiate share-lease agreements or to convert a lease agreement from share to cash.

The changing economic cost structure across different crop enterprises and regions of South Dakota are major explanations for differences in typical share agreements. The two major economic cost factors that vary by region and crop enterprise are land costs, which are contributed by the landlord, and shared input costs as a proportion of total economic costs of crop production.

Land costs as a proportion of total economic costs of crop production are usually lower in western and central regions of South Dakota where average yields for non-irrigated crops are considerably lower (and often more variable) than crop yields in eastern South Dakota.

Land costs in the spring wheat budgets varied from 20% of total economic cost of production in western South Dakota to 33% of total costs in the north-central and northeast regions. Similarly, land costs for soybeans varied from 32% of total economic costs in the north-central region to nearly 41% in southeastern South Dakota, while land costs for corn varied from 24% to 29% of total economic costs in the same regions (Xu, 2002).

These differences in the relative importance of land costs are a major reason why the landlord's share of crop output changes across the state.

The proportion of input costs (excluding management contribution) shared by landlord and tenants varies from less

Table 20. Efficiency & equity tests of non-irrigated crop share lease arrangements, South Dakota, by region and crop enterprise.

Region and Crop Enterprise	Tenant/Landowner Output Share	Yield (Bu)	Estimated Input Contribution				Inputs Shared							
			Tenant \$	Tenant %	Landowner \$	Landowner %	Seed	Fert.	Herb.	Insect.	Chem. Appl.	Crop Drying	Harv.	Insurance
East & Southeast SD:														
1 Corn	50-50	125	127.66	43.5	165.66	56.5	X	X	X		X	X	X	X
2 Corn	50-50	125	147.87	50.4	145.45	49.6	X	X	X			X		X
3 Soybeans	50-50	40	89.44	44.1	113.47	55.9	X	X	X					X
Eastern SD:														
4 Corn	60-40	105	144.86	59.4	99.01	40.6		X	X			X		X
5 Soybeans	60-40	35	109.16	56.3	84.83	43.7		X	X					X
North Central & Eastern SD:														
6 Corn	67-33	85	132.77	63.5	76.47	36.5		X	X		X	X		X
7 Corn	67-33	85	139.14	66.5	70.10	33.5		X	X					X
8 Soybeans	67-33	32	96.36	61.1	61.29	38.9		X	X					X
9 Spring Wheat	50-50	45	67.71	49.6	68.67	50.4	X	X	X	X	X			X
Central & North Central SD:														
10 Winter Wheat	50-50	45	68.53	53.4	59.88	46.6	X	X	X	X	X			X
11 Spring Wheat	67-33	36	69.95	59.9	46.79	40.1		X						X
12 Sunflowers	67-33	16cwt	101.27	66.7	50.47	33.3		X	X	X				X
13 Grain Sorghum	67-33	78	104.76	61.8	64.67	38.2		X	X					X
14 Oats	67-33	75	90.91	66.0	46.87	34.0		X	X	X				X
Western SD:														
15 Grain Sorghum (SW)	67-33	60	94.25	67.5	45.45	32.5		X	X		X			X
16 Spring Wheat (NW)	75-25	30	76.30	77.0	22.83	23.0								X

than 10% of total economic costs in some small grain budgets to more than 35% in corn production budgets of 125 bushels per acre. Shared input costs varied from 18 to 30% of total economic costs in 12 of the 16 crop-share budgets shown in Table 20. In general, as the landlord's share of output increases, especially beyond one-third share of output, the extent of input cost sharing increases.

All machinery and operator labor costs in the 16 crop-share budgets are contributed by the tenant, while management costs are assumed to be shared by the tenant and landlord in the same proportion as their output share. In practice, many of these particular costs are difficult to evaluate in an actual lease and the extent of landlord participation in management decisions may vary from minimal to substantial. Thus, the landlord and renter contribution in an actual lease (with the same inputs shared and output share) may vary somewhat from the results shown for specific leases in Table 20.

Respondents' assessment of their farmland leases

Respondent farmers' assessments of their farmland leases were also used to help evaluate leasing agreements and tenant-landlord relationships in the leasing market. Data in Table 21 lists two measurements of evaluation under

crop-share leases and cash leases: one is fairness; the other is satisfaction.

Most of the respondent tenants feel the fairness of their leases is excellent or good under either cash or crop-share leases. Few tenants, less than 3%, consider their leases as poor.

Most tenants also are generally satisfied or very satisfied with their leases and regard their agreements as fair to both landlords and tenants. Nearly 11.5% of tenants with a cash lease are dissatisfied with their leases; 4.3% of respondents with a crop-share lease are dissatisfied. There are no major differences in respondent assessment of lease agreement by type of individual landlord (Xu, 2002).

Few respondent tenants lease farmland from institutional landlords (financial institutions, corporations, or partnerships) or from governmental agencies. More than a third are dissatisfied with their lease agreement with an institutional landlord or government entity. Nearly 17% of respondents with a crop-share lease with an institutional landlord rate their lease as "poor," while almost a third of respondents with a cash lease with a government/tribal agency rated their lease as "poor" (Xu, 2002).

Respondents' assessment of the degree of competition involved in obtaining leased land is also shown in Table 21. Only 6.1% of respondents indicated there was "intense"

Table 21. Respondent evaluation of leasing agreements and leasing market competition,¹ South Dakota, 1996.

Fairness of Lease:	percent of responses				
	Poor	Adequate	Good	Excellent	No Opinion
Cash	2.8	13.8	43.6	39.4	0.4
Share	1.9	10.4	40.5	45.4	1.8
Satisfaction with Lease:	Very Dissatisfied	Somewhat Dissatisfied	Generally Satisfied	Very Satisfied	
Cash	2.1	9.5	53.9	34.5	
Share	2.2	2.2	54.9	40.7	
Leasing Competition:	No Competition	Slight Competition	Moderate Competition	Intense Competition	No Opinion
Initial Lease Agreement	48.3	19.9	22.3	6.1	3.3
Renewal of Lease	58.5	20.9	15.0	2.4	3.2
Opportunity to lease tract:	Very Uncertain	Uncertain	Certain	Very Certain	No Opinion
Total	4.8	17.5	38.8	34.2	4.7

¹ Based on data from 352 respondents that reported detailed information about their crop share and/or cash leases. Of these 352 respondents, a total of 234 respondents had cash leases and 208 respondents had crop share leases. The numbers reported in the table are percent of responses to each item.

Source: 1996 South Cropland Rental Arrangement Survey.

competition in initially leasing their tract, compared to 48.3% indicating "no competition." The other respondents thought there was some competition in initially leasing their tracts.

Concerning the opportunity to renew their lease, a majority (58.6%) of respondents indicated there would likely be "no competition" while most of the remainder indicated slight to moderate competition. Most respondents (73%) believed there would be continued opportunity to lease their tracts in the next 5 years; however, nearly 22% of respondent tenants doubted their opportunity to continue leasing their most important tract.

Evolutionary changes in farmland leasing patterns: change and stability

This report, along with previous research conducted by the senior author (Peterson and Janssen, 1988; Janssen, 1993), continues to show evolutionary changes in farmland leasing patterns.

The long-term duration of most rental agreements, the mostly local nature of leasing markets and participants, and the tenant-landlord relationship are major sources of relative stability in leasing arrangements. As an example, even though most farmland leases were annual contracts, the typical lease has been in existence for an average of 11 to 14 years. This indicates that landlord and tenant relationships tend to solidify over time, which makes it easier to renew annual leases on terms favorable to both parties. This is likely a major reason that most respondents were satisfied to very satisfied with their lease agreement.

Crop-share leases have built-in changes in net returns to landlords and renters as yields, prices, and input costs change over time. This is a likely reason that relatively few respondents with share leases in the 1996 survey reported changes in the output share or inputs shared (1% and 4% of share lease respondents, respectively) in their lease in the past 5 years.

In practice, typical output shares and distribution of input costs become accepted over time as "fair" and equitable in a locality and region. Only significant alterations of farming practices and crops grown lead to changes in output shares, in sharing of specific input costs, or other modifications in a crop lease.

A comparison of crop-share leases from 1986 to 1996 shows increased incidence of sharing fertilizer, herbicide, and crop drying expenses. The greatest changes are: (1) increased incidence of sharing some input expenses in 2/3-1/3 leases, and (2) increased likelihood of sharing crop drying expenses

in all types of crop-share leases. Overall, 80% of 1996 crop-share leases had cost-sharing for one or more inputs, compared to 75% of crop-share leases in 1986 (Peterson and Janssen, 1988 and this report).

These evolutionary changes in share leases are closely related to expansion of soybean and corn production and reduced small grain/wheat production in many counties of northern and eastern South Dakota. The geographic distribution of output shares has barely changed, but there is an increased incidence of input cost sharing.

Converting lease agreements from cash to share or from share to cash is a major change in lease structure, risk-sharing, and responsibilities assumed by each party. Results from the 1986 and 1996 surveys indicated few leases in either time period had been converted from a cash lease to a share lease in the previous 5 years. However, 12% (18%) of 1996 (1986) cash lease respondents had switched from a crop-share lease to a cash lease in the previous 5 years. The switch in lease type (cash or share) occurs most often when there is also a change in either the landlord or tenant.

Cash rental payments are flexible over time, but are somewhat "sticky" for individual leases. The cash rental payment was adjusted (mainly increased) in three-fourths of 1996 cash leases during the previous 5 years. For leases in 1996, the average number of years between changes in cash rental rates was 7.3. A similar pattern occurred for cash leases evaluated in the 1986 survey.

Further comparisons of South Dakota farmland leasing survey results in 1986 and in 1996 indicated share leases were more common than cash leases for cropland in 1986, while cash leases were more common than share leases in 1996. An estimated 55% of cropland acres leased in 1996 were cash rented by respondents, compared to 40% of cropland acres leased in 1986.

Some of the benefits and disadvantages of cash leases and share leases can be controlled by developing a hybrid lease, combining elements of cash leases and share leases.

For example, a crop-share lease could be modified to guarantee the landlord a minimum cash payment at least equal to the amount of property taxes levied on the leased land in exchange for the renter receiving a higher proportion of the crop output.

In another example, a flexible cash lease can be developed with an initial constant payment received prior to planting season and a final payment based in part on the amount or value of production. Finally, a crop-share lease agreement could contain a supplemental cash payment to correct for major differences in the economic cost contribution and output share of each party (Xu, 2002; Barry et al., 2000).

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