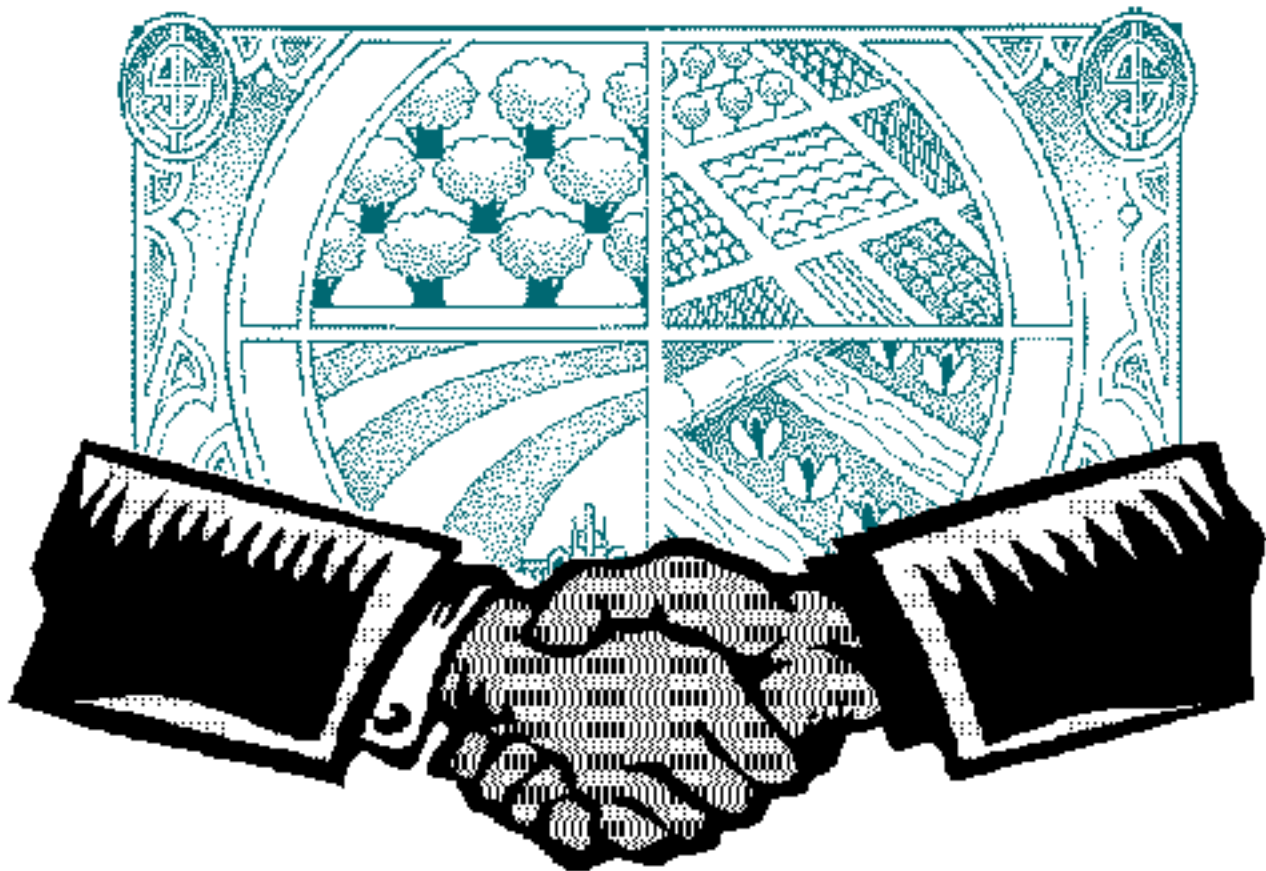


Cropland Leasing Considerations



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Cropland Leasing Considerations

A large percentage of Tennessee cropland is farmed under some type of lease arrangement. As the number of owner-operated farms has declined, a larger amount of land has come under the management control of the tenant. More land is being held by retired farmers, heirs and non-farm investors. Many of these are absentee landowners. A substantial number of farmers have been forced to postpone the purchase of land because of inadequate cash flow. This problem has been caused by sharp increases in land and other input prices, higher interest rates and relatively low farm product prices.

Some leases do not encourage the most efficient and profitable farm operation over a period of years. Rental arrangements are based on custom in many instances. However, customary rates often fail to adequately consider the productivity of the land, changing farming practices and shifts in economic conditions. The results of many leasing arrangements based entirely on custom are inequitable returns to one of the parties and/or reduced farm production and income.

The uncertainty associated with short-term leases (often for one year) may result in reduced production efficiency, lower farm income and excessive soil loss. If the tenant is not certain that the farm will be available for his or her use for more than one year, he or she will be reluctant to make needed expenditures for lime, fertilizer, herbicides or soil-conserving practices that require more than one year for maximum benefits. Many problems associated with short-term leases can be solved with longer-term leases that encourage higher and more equitable distribution of net income.

What is a Farm Lease?

A farm lease is a contractual agreement through which a landowner transfers to a tenant certain rights that go with the use of land and other

real or personal property. A lease specifies the time period and the share of production or cash payment to be paid as rent. A lease may be oral or written. An oral agreement is generally valid only if it can be completed in one year.

Objectives of a Farm Lease

Lease agreements should be designed to achieve efficiency and provide for an equitable distribution of income and expenses. A break with tradition may be necessary to achieve these objectives. Leases should be based on economic principles, as well as common sense. An efficient lease is achieved if it allows the farm to realize its total potential returns while protecting the interests of both parties. An equitable lease provides that each party share returns in proportion to the value of selected inputs contributed. This procedure provides motivation for both parties to concentrate on the most efficient use of resources. If there is unequal sharing of inputs and crop returns, less-efficient production is encouraged and problems may develop between the parties. The procedure for determining the value of input contributions is discussed later in this publication.

Value of a Written Lease

Although many oral lease agreements have worked without problems, a written lease is highly desirable. Putting agreements in writing should be considered an accepted business practice, and not an indication of distrust or lack of confidence in the other party. Mutual trust is an important ingredient if the lease arrangement is to be workable and long-lasting.

Some of the primary advantages of a written lease agreement follow.

1. A written lease forces the landowner and tenant to consider and agree to the essential considerations of leasing and operating a farm.
2. A written lease outlines the privileges and responsibilities of each party.
3. A written lease verifies the terms and conditions originally agreed upon. When the memory of either party becomes "fuzzy," reference to the written agreement can clear up the matter and prevent a misunderstanding which could lead to a broken relationship.
4. A written lease provides a valuable guide in case either party becomes physically or mentally incapable.

Putting a lease in writing will not guarantee a fair, trouble-free and profitable arrangement. It will, if properly developed, prevent misunderstanding and provide for a means to handle problems if they should develop.

Types of Leases

There are two basic types of leases used with cropland. They are the cash lease and the crop-share lease. The most common landowner-tenant share agreements in Tennessee are the 1/3 - 2/3, 1/4 - 3/4 and 1/2 - 1/2 share arrangements. The cash rental arrangement generally specifies a fixed annual dollar rent, although a flexible cash rent agreement is sometimes used and has definite advantages.

The parties must select the type of lease which is best suited to their situation. Several considerations should be weighed carefully before the final selection is made. Both landowner and tenant must determine what contributions of labor, capital and management skill they are able and willing to provide. They must also decide what production and price risks each party will bear. Making these determinations will give a general indication of the type of agreement which best fits.

A landowner's choice of a lease type may be influenced by his or her Social Security status. If the landowner is retired and less than 70 years of age, he or she may not want to receive land rent which could be considered earned income. In general, income received by a landowner actively participating in a share lease is classified as earned income. A landowner is actively or materially participating in the production or management of a crop if he or

she is involved in a significant way in producing or marketing crops. If large enough, earned income may result in a reduction of monthly Social Security benefits. In contrast, rent received as part of a cash rental agreement, where the landowner is not actively participating in management, is treated as unearned income and will not reduce Social Security payments. However, if the landowner is less than 62 years of age, unearned income does not count for the purpose of building a Social Security base.

Farm Lease Provisions

Although many people object to long, drawn-out agreements, a lease should anticipate as many problems and developments as possible and spell out how they are to be handled. The following provisions are worthy of consideration for including in a farm lease.

1. **Basic Legal Minimum** If the lease is in writing, there are five basic requirements for the lease to be enforceable. They are: (a) a reasonably accurate description of the land and/or buildings to be leased; (b) a specified rental rate (or procedure for calculating the rate) with designation of the time and place payment is to be made; (c) a definite time period over which the lease is to extend; (d) the names of the landowner (lessor) and the tenant (lessee); and (e) the signature of the parties involved.

The farm may be described legally and/or by popular name (Ben Jones Farm). Additional descriptions can include the distance and direction from town, the road on which the farm is located and/or the rural mail route.

Rental rates and arrangements for payment are a very important part of any lease. There are basically two ways for the tenant to pay for the use of land: (a) cash rent; and (b) crop-share rent. Both are quite common in Tennessee. The amount of cash rent and the crop share should be influenced by land productivity, crop price, farm size, location, demand for land, managerial ability of the tenant, prevailing cash rental rates in the area and the bargaining power

of the two parties. The rental agreement should stipulate when the rent is to be paid. Cash rent is often paid after the crop is harvested but can be split into two or more parts, some of which could be payable prior to planting. Share rents range from one-fifth to one-half of the crop.

The duration of the lease can be any length of time agreeable to the parties involved. Most leases are in effect for at least one year. Very few have a term of more than five years. It is often in the interest of both parties for a lease to run at least three years so a tenant can justify needed expenditures for such items as lime, herbicides for problem weeds and soil conservation practices, all of which should lead to higher yields and income for both parties. Longer-term leases are sometimes objectionable because they can be a problem if the farm is sold during the lease period. This problem can be solved by simply including a termination clause which would apply if the farm were sold. Landowners often favor a short-term lease, especially where fixed cash rent is specified. Specifying a "going" cash rent of \$55 per acre, for example, can be risky for both parties in a long-term lease. Rapid changes in crop commodity prices, production costs and inflation rates can make a fixed cash rent unfair to one of the parties during the lease period. This problem can be generally overcome by tying the cash rent to prices, yields and perhaps production costs. Flexible cash rent is discussed later in this publication.

2. Land Use Practices If a landowner is interested in maintaining or improving soil productivity, a land-use and cropping program is an important part of a lease agreement, especially if it is a multi-year lease. Consideration should be given to soil type, slope and susceptibility to erosion to determine land suitable for row crop production. Restrictions concerning cropland use may include rotations, limitation of crops grown, and cultural and mechanical practices to be used.

3. Farm Operating Expenses This section of the lease provides an opportunity for the

tenant and the landowner to discuss, agree upon and specify the share of cash production costs that are to be paid by each party. With a cash lease, all of the production costs are paid by the tenant.

- 4. Rights and Privileges** Property rights of each party should be stated. Specific provisions which are common include:
- (a) The right of the landowner to inspect his or her property but not to interfere with the tenant's rights under the agreement. Without this provision, some courts have held the landowner to be a trespasser if he or she enters.
 - (b) The tenant is normally able to harvest crops planted during the lease term or crops in which the tenant has a legitimate interest. This does not mean that any perennial crops sown during the lease can be harvested after the lease has ended.
 - (c) The handling of improvements made by or temporary buildings and fences erected by the tenant should be stipulated. If improvements are made, will the tenant be compensated? Will he or she be allowed to remove certain improvements?
 - (d) Agreements regarding property rights such as crop residue grazing, fishing, hunting, recreation and forestry land should be included in the lease agreement. This can prevent misunderstandings that may later develop between the landowner and tenant.

5. Maintaining Records If the agreement is a share lease, one party will need to keep records. The recordkeeping requirements may be minimal, especially if the landowner does not share in the crop production expenses. The tenant should probably keep the records since he or she is closer to day-to-day farm operations.

6. No Partnerships A statement is advisable in the lease agreement to make clear that there is not intent to operate as a partnership.

7. **Settling Differences** Most matters involving difference of opinion can generally be settled by discussions. If differences of opinion between the two parties cannot be settled easily, this section of the lease can be used to encourage the use of disinterested persons (usually three) for settling differences in a friendly manner rather than through legal proceedings.

8. **Default** If either party fails in a substantial way to carry out the terms of the lease, a provision is often included to allow the other party to terminate the lease by serving a written notice which cites the areas of default and the effective date of termination

(usually several days after the notice is served).

9. **Additional Agreements and Modifications**

It is often necessary to change or add to existing agreements. One of the tests of a good lease is its flexibility. A good agreement is one which is customized to fit the interests of the parties involved. Any changes made after the initiation of the original lease contract should be made a part of the written agreement, even though both parties are in oral agreement.

For an example of a farm lease agreement, see The University of Tennessee Agricultural Extension Service Form 669, *Farm Lease Agreement*.

The Cash-Crop Lease

The cash lease has been popular in Tennessee for many years. The primary attraction of this method to landowners is the minimal responsibility which must be assumed. This type of lease also provides tenants maximum operating freedom. Some specific considerations pertaining to cash leases are listed below. These points should be helpful to a party attempting to decide whether or not to use a cash lease arrangement.

4. There is less concern over the accurate division of crops and expenses.
5. No time and worry are involved in marketing crops.
6. Fixed cash rent reduces concern over variation in yields and product prices.
7. For older landowners, cash rent can usually be received without reducing Social Security benefits.

Advantages of the Cash Lease

A. To the Landowner:

1. Income is definite and steady if a fixed cash agreement is used.
2. The cash lease requires less supervision and management.
3. A simpler lease combined with little or no management input provided by the landowner means that the possibility of friction between the landowner and tenant is reduced.

B. To the Tenant:

1. This arrangement allows more management freedom in operating the farm.
2. Potential friction between tenant and landowner is reduced.
3. There is more incentive to strive for higher yields, because the crop is not shared with the landowner.
4. If cash rent is fixed, the tenant will benefit from unusually high yields and/or prices.
5. A cash lease eliminates the need to divide crops or income from the sale of crops.

Disadvantages of the Cash Lease

A. To the Landowner:

1. Tenants may tend to exploit or “mine” the land unless a long-term lease is negotiated.
2. The landowner will usually receive a smaller return, since he or she assumes less production and price risk.
3. Once a fixed cash rent is established, it may be difficult to negotiate needed changes in the rental rates due to changes in prices and production costs without changing tenants.
4. There is no opportunity to share in “wind-fall” profits in years when yields and/or prices are high.
5. A cash lease offers little opportunity to build an earnings base for Social Security purposes because of difficulty in establishing “material participation.”

B. To the Tenant:

1. With a fixed cash agreement, the risk is greater because the tenant assumes most or all of the production and price risk.
2. Cash rents do not automatically change to reflect changes in prices, yields and production costs unless some provision is made in the lease.

Establishing a Fair Fixed-Cash Rental Rate

If the decision is made to use a cash rental arrangement, what is a fair cash rent for the cropland under consideration? Four methods can be used to establish a fixed cash rent. These include an evaluation of: (1) prevailing cash rental rates, (2) the ability of the tenant to pay, (3) the landowner’s cost, and (4) the landowner’s adjusted net share rent.

Prevailing Cash Rental Rates

Use of this method requires general knowledge of cash rents being paid for cropland in the area. Adjustments in cash rental rates should be made for differences in land productivity. This process may involve some difficulty in determining actual cash rents being paid for cropland in the area and adjusting for differences in land quality.

Ability of Tenant to Pay

Many times tenants will pay too much for the use of land in their desire to control more land and spread fixed machinery costs over a larger acreage. Before bidding for land, tenants should carefully estimate how much capital will be available to pay for land use after deducting appropriate out-of-pocket costs, fixed costs on machinery and a return to management (if desired) from expected gross revenues. Some tenants prefer to include only variable costs in estimating the maximum amount that can be paid for land. Their reasoning is that for a particular year, true fixed or overhead costs continue regardless of whether or not the machinery and equipment are used. However, farm machinery will not be eventually replaced unless all costs are expected to be recovered. Table 1 provides a procedure that a tenant can use to estimate how much he or she can afford to pay as land rent. The amount shown is the maximum that can be paid and still allow all specified costs to be covered. The tenant should expect to rent land at something less than the maximum to allow a profit.

The valuation of labor and management provided by the tenant is not always easy. The amount of labor required should reflect the time used for producing and marketing crops, and general maintenance. The labor should be valued at about what the tenant could earn for farm work in the area. The management charge is rather arbitrary. However, management is required to make production and marketing decisions and should be rewarded.

Using the procedure in Table 1 will enable the tenant to estimate the maximum amount he or she can pay as cash rent. This procedure will lead to the rewarding of more productive cropland. With less productive land, the amount which the tenant can afford to pay may well be less than prevailing cash rental rates.

Table 1. Worksheet for Estimating the Amount a Tenant Can Afford to Pay as Cash Land Rent

A. Gross Value of Crops Produced					
A	B	C	D	E	F
Crop	Acres	Expected Yield	Production (B x C)	Expected Price	Gross Revenue (D x E)
Soybeans	150	35	5250	\$6.25	\$32,812.50
Corn	50	120	6000	\$2.50	\$15,000.00
Total					\$47,812.50
A	B	C	D		
Crop	Acres	Cost (\$/acre)	Total Cost (B x C)		
B. Less Costs:					
1. Variable					
	Soybeans		150	\$78.13	\$11,719.50
	Corn		50	\$137.97	\$6,898.50
Total Variable Costs					\$18,618.00
2. Fixed					
	Soybeans		150	\$21.63	\$3,244.50
	Corn		50	\$26.69	\$1,334.50
Total Fixed Costs					\$4,579.00
3. Labor					
	Soybeans		150	\$5.10	\$765.00
	Corn		50	\$5.74	\$287.00
Total Labor Costs					\$1,052.00
4. Management Allowance					
	a. Gross Revenue		\$47,812.50		
	b. Percent		6%		\$2,868.75
5. Total Specified Costs (lines 1 through 4)					\$27,117.75
C. Maximum Rent Which Can be Paid for Land (line 4a less line 5)					\$20,694.75
D. Maximum Cash Rental Rate Per Acre (line C divided by # acres)					\$103.47

Landowner's Cost

The landowner needs to calculate his or her cost of ownership. A procedure that can be used in making the determination is demonstrated in Table 2. The major considerations in determining the owner's cost are land valuation and the selection of an appropriate interest rate to apply to the land value. The per-acre land price should reflect a realistic market value for the cropland. Present mortgage interest rates or market rates cannot be used. Use of these rates would likely lead to a cash rental rate well above prevailing rates and the ability of the tenant to pay. A more realistic rate is the 4 to 6 percent range, based on studies which show current cropland earnings to be in this range when land appreciation is excluded.

Table 2. Calculating Landowner's Costs in Estimating a Fixed Cash Rent

1. Acres		200
2. Value (\$/acre)		\$1,200
3. Interest Rate		5%
4. Interest on Investment	(line 1 x line 2 x line 3)	\$12,000
5. Repairs (\$/acre)		
6. Real Estate Tax Rate (\$/acre)		\$12
7. Real Estate Taxes	(line 1 x line 6)	\$2,400
8. Depreciation on Improvements		
a. Buildings		
b. Fences		
Total	(line 8a + 8b)	
9. Total Costs	(line 4 + line 5 + line 7 + line 8)	\$14,400
10. Per Acre Costs	(line 9/line 1)	\$72

Landowner's Adjusted Net Share Rent

This approach determines the amount of rent the landowner would receive under a crop-share arrangement after paying any costs and after adjusting for reduced risk. Fixed cash rents are normally expected to be lower than share rents, since the landowner shifts his or her yield and price risks to the tenant. The difference between a net (after cost) share rent to the landowner and cash rent represents the tenant's compensation for this additional risk.

To estimate net share rent, a landowner should use expected prices and yields, and his/her share of current production costs if applicable.

Once the net share rent has been estimated, the two parties must decide how much this rent should be adjusted for risk reduction to the landowner. In many situations, net share rent is reduced 10 to 20 percent to a cash equivalent, reflecting the reduced risk to the landowner. For example, if the landowner's returns based on the contribution approach and a 1/3 - 2/3 share agreement is \$65, discounting the share rent by 15 percent results in a cash rent equivalent of about \$55 per acre (see Table 3).

Table 3. Landowner's Adjusted Share Rent

1. Rental Rate	\$65.00
2. Adjustment Percent	0.15%
3. Adjustment (line 1 x line 2)	\$9.75
4. Adjusted Share Rent (line 1- line 3)	\$55.25

A comparison of cash rental rates using the four approaches is shown in Table 4. The bargaining position of the two parties is important in establishing the specific cash rental rate. The bargaining process should provide an opportunity for each party to understand the position of the other. The most effective bargaining occurs when each party knows the value of his or her own contributions, the value of the other party's contributions and local leasing arrangements.

Blank worksheets are provided in the back of this publication for each of the tables.

Table 4. Comparison of Cash Rental Rates Using Different Approaches¹

1. Prevailing cash rental rate		\$55.00
2. Tenant's ability to pay (maximum)	Table 1	\$103.47
3. Landowner's cost	Table 2	\$72.00
4. Landowner's adjusted share rent	Table 3	\$55.25

¹Based on example situation involving 150 acres of soybeans (35-bushel potential yield) and 50 acres of corn (120-bushel potential yield).

Flexible Cash Rent

Crop prices, yields and production costs vary considerably from one year to the next. These major uncertainties make both tenant and landowner hesitant to become "locked-in" with a fixed cash rental rate, especially for more than one year. Landowners often resist long-term cash rental agreements because of the problems caused by inflation and because they believe it is unfair for the tenant to reap all of the benefits of sharply rising crop prices. Tenants tend to resist long-term arrangements featuring fixed cash rent because of the economic hardship which is possible if crop yields or crop prices drop sharply, or if production costs increase substantially. Despite these shortcomings of fixed cash rental agreements, neither party may want to use a crop-share arrangement. A workable alternative is a flexible cash rental agreement.

There are several advantages and disadvantages of flexible or adjustable cash rental arrangements which should be considered by both parties.

Advantages

A. To the Landowner:

1. This arrangement enables sharing of additional income that results from higher yields and prices if they are part of the flexing formula.

B. To the Tenant:

1. There is reduced production and price risk.

Disadvantages

A. To the Landowner:

1. Flexible rental cost increases price and production risk, since the rent received may decline in years when yields and/or prices are below normal.
2. Flexible agreements are slightly more difficult to develop than fixed cash rental arrangements.
3. Poor management by the tenant can lead to reduced yields and lower income to the landowner (if yields are part of the flexing procedure).

B. To the Tenant:

1. Higher cash rent and lower income will

result when yields and/or prices are above normal.

2. When the agreement flexes on individual farm yields, the tenant's incentive may be reduced by having to share the rewards of superior management.
3. Rent determination is somewhat more involved than with fixed cash arrangements.

There are several ways to flex or adjust cash rent. The three which appear to have the most merit are discussed below. They are concerned with adjusting for: (1) crop price changes only, (2) changes in crop prices and/or yields, and (3) changes in crop prices, yields and production costs.

Adjusting for Price Change Only

The cash rent determined by this method is tied to: (1) a base rent and a base price of crops, or (2) a base rent with stated adjustments for crop prices outside a specified range.

If cash rent is tied to a base rent and a base price, landowner and tenant must agree on a base cash rent for land and a base price for the crop(s) in question. A base cash rent can be determined by estimating average rent for land in the area of the same general productivity. The base crop price can be determined by the average market prices over the past two or three years. For example, the base rent may be established at \$60 per acre and the base price for soybeans may be set at \$6.25 per bushel. If the price of soybeans averages \$7.15 the following year, the cash rent would adjust upward to \$68.64 per acre. The calculations are as follows:

$$\text{Cash rent} = \frac{(\text{Base rent}) \$60 \times (\text{Current year's price}) \$7.15}{(\text{Base price}) \$6.25} = \$68.64$$

If soybean prices fall below the base level, the cash rent will adjust downward. Prices used should be based on some specific time period and tied to some location. The time specification may be during the primary harvest period (perhaps October 10 through November 20 for soybeans) or the season average price that is released by the U. S. Department of Agriculture. The location on which prices are determined can be a specific elevator, statewide or nationwide. Using average prices received by the tenant as a basis for adjusting cash rent is probably not wise, since poor marketing by the tenant would penalize the landowner. On the other hand, if the tenant is a superior marketer he or she should not be forced to share these skills with the landowner.

Cash rent can also be tied to a base rent with adjustments when prices are outside specified ranges. Using a \$60 base rent and a \$6.25 base price for soybeans, an agreement might specify \$60 cash rent if soybeans average in the \$6.01 to \$6.25 price range. For each \$.25 increase or decrease in the price of soybeans above or below this price range, the cash rent could change in the same direction by a stated amount, say \$2 per acre. For a 35-bushel soybean yield, the landowner in this situation would share about 25 percent of any price increase or decrease from the base level, with the remaining price risk borne by the tenant. For example, if the price of soybeans dropped to \$5.35 per bushel, the cash rent would adjust downward to \$54 per acre. A schedule can be constructed and made a part of the lease, as shown in Table 5. Adjustments in this schedule can be easily made. For example, if the parties decide that more of the price risk should be borne

by the landowner, cash rent would adjust to a greater degree from the stated base price level. If it seems appropriate for the landowner to assume about one-third of the price risk, then the cash rent would adjust by \$2.10 per acre for each \$.25 change in price from the base price range (35-bushel soybean yield). The same procedure can be used for other crops.

Adjusting for Price and Yield

The determination of cash rent with this approach requires the landowner and tenant to agree on a base yield and a base price expected for each crop being considered. The base yield can be determined by the three- to five-year farm average yield under average management conditions. Making adjustments for yield changes will require published figures for the county or state, or actual yields from the farm in question. Preliminary state average yields are available from the U.S. Department of Agriculture crop reports released in November and December. Using county average yields for calculating cash rent will require waiting several months after harvest for the official data to be released. A shortcoming of the use of county or state average yields is those yields on a particular farm could deviate from county or state averages due to adverse or beneficial weather conditions.

Table 5. Example of Adjustable Cash Rental Schedule Based on Price Ranges

Average Soybean Price/Bu., Oct. 10-Nov.20	Cash Rent Per Acre
\$4.76-\$5.00	\$50
5.01-5.25	\$52
5.26-5.50	\$54
5.51-5.75	\$56
5.76-6.00	\$58
6.01-6.25 (base)	\$60 (base)
6.26-6.50	\$62
6.51-6.75	\$64
6.76-7.00	\$66
7.01-7.25	\$68
7.26-7.50	\$70

If average yields on the farm in question are to be used, rather than county or state yields, a tenant with at least average management ability should be selected. Agreement between the parties is necessary to determine how yields are to be measured. If grain or soybeans are stored, volume measurements will be necessary if settlement is to be made before the crop is sold. The agreement should indicate who makes the production estimates, when they are to be made and any yield adjustments for excess moisture and foreign material.

Adjusting or flexing cash rent on the basis of price and yield changes is easily done. For example, assume that the base cash rent is \$60, the base price is \$6.25 per bushel of soybeans and the base yield is 35 bushels. If drought results in a yield reduction to 30 bushels/acre and an average price of \$7.15 per bushel, the flexing process works as shown below.

$$\text{Cash rent} = \text{Base rent } (\$60) \times \frac{\text{Yield this year (30 bu)}}{\text{Base yield (35 bu)}} \times \frac{\text{Price this year } (\$7.15)}{\text{Base price } (\$6.25)} = \$58.83$$

Flexing for Price, Yield and Production Cost

The addition of changes in the level of production costs gives a more accurate picture of how much the tenant can afford to pay as cash rent. Estimates of crop production costs can be obtained by carefully evaluating farm records or by adjusting (if necessary) published budgets, such as those provided in *The Field Crop Budgets*, Agricultural Extension Service, The University of Tennessee.

The production cost estimate used should probably include all variable or out-of-pocket costs including labor and interest, and machinery overhead costs. Placing a value on management skill is optional.

The addition of production costs to the cash rent flexing formula simply adds one more item to the calculation process. Continuing with the same example as used in the previous section, except to add a base-year production cost estimate of \$105/acre, the calculation would be made as follows. Note that base-year production costs are the top part of the fraction. This is necessary because of the inverse relationship between production costs and net returns.

$$\text{Cash rent} = \text{Base rent } (\$60) \times \frac{\text{Yield this year } (30 \text{ bu})}{\text{Base yield } (35 \text{ bu})}$$

$$\frac{\text{Price this year } (\$7.15)}{\text{Base price } (\$6.25)} \times \frac{\text{Base production costs } (\$105)}{\text{Production costs this year } (\$110)} = \$56.16$$

The Crop-Share Lease

The determination of an appropriate crop-share or cash lease arrangement will have a significant influence on net farm income and satisfaction of the two parties. The most effective lease will be structured to reward both parties in proportion to the value of contributions provided. Selecting a specific lease agreement may not be an easy task. Some specific advantages and disadvantages of the crop-share lease which should be considered by the two parties are listed below.

Advantages of the Crop-Share Lease

A. To the Landowner:

1. Income over time should be higher since the landowner shares in more of the production and price risks.

2. There is a greater opportunity to supervise the farm operation.
3. An opportunity exists to build Social Security coverage if contributions of management and operating capital for crop inputs are made.

B. To the Tenant:

1. Production and price risks are reduced when compared with a cash lease.
2. Less operating capital is required in share situations where the landowner provides part of the operating costs.
3. Management skills, farm knowledge and experience of the landowner may be quite valuable to the tenant.

Disadvantages of the Crop-Share Lease

A. To the Landowner:

1. Management input and financial contributions for crop production items are often required.
2. The landowner must trust the tenant for a fair distribution of the crops produced.
3. The owner must assume responsibility for marketing crops received as share rent.
4. Inferior management by the tenant can lead to reduced yields and income.
5. Production and price risks must be shared with the tenant.

B. To the Tenant:

1. There is less independence in operating the farm than with a cash lease.
2. Income over time should be lower than with a cash lease since the landowner bears part of the production and price risks.
3. More detailed records are required pertaining to the sharing of yields and production costs.

Evaluating Crop-Share Leases

Farming is a business in which land, production inputs, machinery, labor and management are combined to produce crops. In a crop-share lease arrangement, each of these items may be owned or contributed by different parties. Payment for the items should be equal to the value contributed toward production. Equitable payment to each party is the reason for developing a fair lease.

The typical crop-share arrangements in Tennessee are the 1/3 - 2/3 share and the 1/4 - 3/4 share. In a few counties on soils which are well above average in productivity, a 50-50 share is sometimes used. This 50-50 (1/2 - 1/2) share arrangement is much more common on the more productive soils in the Midwestern states. On some of the least productive soils for crop production in Tennessee, a 1/5 - 4/5 share agreement is occasionally used.

A good crop-share lease must be developed using some basic rules or principles. The following discussion contains excerpts from *Crop Share or Crop Share/Cash Rental Arrangements for Your Farm*, North Central Region Extension Publication 105. Five important principles to follow in a crop-share lease agreement are:

1. Variable expenses that are yield-increasing should be shared in the same percentage as the crop share.
2. As new technologies are adopted, share arrangements need to be adjusted to reflect their impact on costs and returns.
3. Both parties should share in total returns in the same proportion as they contribute resources.
4. Tenants and/or landowners should be compensated at the termination of the lease for the unexhausted portion of long-term investments.
5. Communication must be maintained between landowner and tenant.

Principle No. 1. Variable expenses which are yield-increasing should be shared in the same percentage as the crop share.

Variable inputs or expenses are those used in production, such as: seed, fertilizer, herbicides, insecticides, fuel, harvesting, drying and hauling. Some, such as fertilizer, are directly yield-increasing. Sharing a cost such as fertilizer in the same percentage as the crop is shared may encourage landowner and tenant to look more closely at its level of input.

Principle No. 2. As new technologies are adopted, share arrangements need to be adjusted to reflect their impact on costs and returns.

Substitution occurs when some input can be used to replace another input. For example, chemical weed control may replace cultivation. Who should pay for the chemicals? Three situations affect who should pay.

1. *Yield-increasing inputs* - These inputs should be shared between the landowner and tenant.
2. *True substitution inputs* - These inputs should be paid by the party responsible for the item in the original lease.

3. *Inputs which are both yield-increasing and substitution* - The lease needs to address this situation.

Principle No. 3. Both parties should share in total returns in the same proportion as they contribute resources.

This principle implies that if a landowner contributed 50 percent of total resources and the tenant 50 percent, then a sharing of the crop 50/50 would be equitable. All inputs should be valued, including management and risk.

The relationship among these inputs is that on high-priced, productive land, the landowner's share of the crop should be increased. This results because the tenant's costs (machinery, labor and management) tend to be nearly the same on either high-priced, productive land or low-priced, less-productive land.

A major problem with crop share leasing is that crop share percentages are influenced strongly by customary arrangements in the area. A further problem is that customary share arrangements change little over time, even though the relative values of land, machinery, labor and management may change markedly.

Thus, the landowner and tenant should determine their contributions according to the actual operation, rather than on the basis of what has been, or is, customary for the area.

Principle No. 4. Tenants and/or landowners will be compensated at the termination of the lease for the unexhausted portion of long-term investments.

If such arrangements cannot be developed, then the party that will likely control this investment at the termination of the lease should make the contribution. For example, lime applied to cropland is usually paid by the landowner as the value lasts for several years. If the tenant pays for the lime application, then the lease should provide for a method of calculating the payment to the tenant for the unused portion of the lime if the lease is terminated before the total value of the lime is recovered.

Principle No. 5. Communication must be maintained between a landowner and tenant.

If the lease does not follow the first four leasing principles, the farming operation may not

produce at maximum economic efficiency, or one party may gain at the expense of the other.

However, strict adherence to these first four principles cannot guarantee success, particularly if adequate management and effective communication between landlord and tenant are not used. Therefore, securing a good tenant and making necessary adjustments to the lease arrangement to make it an attractive business operation for the tenant may well be the key to maximum profits for the landowner.

Developing a Fair Crop-Share Lease Arrangement

The next step is to apply the above principles in determining a fair crop share arrangement for your operation.

Table 6 is designed to provide information for establishing a fair and equitable crop share arrangement. The concept is based on the principles discussed earlier, particularly the principle that both parties should share in the total returns in the same proportion as their contributions.

The worksheet provides answers to two problems:

1. How should the crop be shared between landowner and tenant?
2. How should the cost of shared inputs be divided between the landowner and tenant?

The worksheet can be used to analyze a leasing situation in either of two ways:

Approach No. 1: Contributions approach. The percentage contribution of non-shared expenses of each party is determined. Then, the parties share other operating expenses and crop(s) in the same percentage. The example shows a 40-60 share of the crop, and all operating expenses would be shared on the same basis.

Approach No. 2: Desired-share approach. In this case, the parties specify a given percentage share basis (say, 1/3—2/3), and then adjust contributions to fit this percentage. This approach may violate principle No. 1 if yield-increasing inputs, such as fertilizer, are not shared in the same percentage as the crop.

The major task with either approach is to establish fair values and annual use charges for the various contributions. The following discussion will outline this valuation process, illustrated in Table 6. A blank worksheet is also provided.

Land: Land's value should be at its fair market value for agricultural purposes. The influence of location near cities and other non-agricultural influences on value should be ignored.

Interest on land: A practical "bargaining" rate of interest may approximate 5 to 7 percent because:

1. The current value of real estate is used rather than the purchase price.
2. If the farm was sold, the net dollars available to loan out at a higher rate of interest would be lower than the fair market value because of income taxes and sale expenses.
3. Actual returns to land have been in the 3 to 5 percent range as an annual return above all charges, except land.

Real estate taxes: The actual taxes due annually.

Land development: The average dollars spent annually for lime, conservation practices and other land improvements.

Crop machinery: The value of machinery should be the average value of a good line of average machinery necessary to farm in the area. The value should not be the cost of a new line of machinery. Likewise, the value cannot be the actual cost to the tenant (as land cannot be the actual cost to the landowner) because the tenant may have a very large investment of machinery spread over a few acres. In turn, the tenant may have old, serviceable machinery which has a low value. Values used in Table 6 were taken from *The Field Crop Budgets*, Agricultural Extension Service, The University of Tennessee.

Machinery depreciation: Depreciation years for machinery are six to eight years remaining useful life.

Machinery repairs, taxes and insurance: Farm records indicate repairs are 6 to 9 percent of the average machinery value. The charge for taxes and insurance should be from $1/2$ to 1 percent.

Machinery interest: The current interest costs on the average machinery value (usually one-half the total value) should be used.

Labor: Labor can be contributed solely by the tenant, or by both the tenant and landowner. (Caution should be used to not form a partnership when considering contribution of labor and management by the landowner). Each party is given credit by placing a value on labor contributed to the business.

Placing a value on labor is a bargaining process between the parties entering the leasing arrangement. A guide for estimating the value of labor is the going wage rate paid to farm employees within the community. Most farm operators are certainly worth more than the value of an average employee because of their management. (Management is valued separately from labor).

Management: Management is an important contribution to a successful leasing agreement. The function of management may or may not be shared. Experienced landowners may make substantial contributions to the management of the farm business. But, inexperienced or absentee landowners may contribute nothing to management. If the landowner contributes to management, then credit needs to be given. If the tenant bears all management responsibility in the choice of crops, inputs or other major considerations, then a value should be placed on this management function.

The value of management becomes largely a bargaining proposition between parties entering into the leasing agreement. Two alternatives are possible:

1. A possible guide is 1 to $2\frac{1}{2}$ percent of the average capital managed in the business. The average capital managed is equal to the market value of the land and value of machinery.
2. Professional farm managers commonly charge 7 to 10 percent of adjusted gross receipts. (In the case of crop production, gross receipts equal total crop receipts).

Either procedure will provide an estimated value for management. However, a value equal to 1 to $2\frac{1}{2}$ percent of average capital managed is a more stable figure than a percentage of gross receipts, because prices and yields for commodities vary greatly from year to year.

The example in Table 6 shows a 40-60 share of the non-shared expenses (line 27). Using approach one or the contributions approach, the parties would share other operating expenses (ie. fertilizer and lime) in the same percentage (line 35).

In this example, the parties specify a given percentage share (1/3 - 2/3). Adjustments in the shared items were needed to fit this percentage. In lines 36 through 43, shared item expenses were adjusted so the tenant was responsible for fertilizer and lime. This results in an approximate 1/3 - 2/3 share.

Table 6. Crop Approach to Crop-Share Arrangements

Crop	Soybeans	Acres	150	Shares:	Landowner 1/3	Tenant 2/3	
Item	Total or per acre value	Rate or life	Annual charge	Landowner	Tenant		
Non-shared Items							
1. Land	\$1,200.00	x	0.05	\$60.00	\$60.00		
2. Real estate tax			0.01	\$12.00	\$12.00		
3. Land maintenance							
4. Crop machinery interest				\$7.41		\$7.41	
5. Depreciation				\$14.22		\$14.22	
6. Repairs				\$8.32		\$8.32	
7. Insurance							
8. Taxes							
9. Labor	0.82 hour	x	\$6.25 \$/hour	\$5.13		\$5.13	
10. Management	\$217.67	x	0.09	\$19.59		\$19.59	
11. Fertilizer	Enter Charge Only For Items Not Shared						
12. Lime							
13. Seed					\$13.58		\$13.58
14. Fuel-Oil					\$4.29		\$4.29
15. Herbicides					\$25.09		\$25.09
16. Insecticides							
17. Harvesting							
18. Drying					\$8.00		\$8.00
19. Hauling							
20. Crop Insurance							
21. Other							
22. Operating Interest			\$2.31		\$2.31		
23.							
24.							
25.							
26. Total non-shared costs (Lines 1-25)				\$179.94	\$72.00	\$107.94	
27. Percent non-shared costs= Line 26 Landowner (Tenant) Line 26 Total-Per Acre Charge				100%	40%	60%	

Table 6. Crop Approach to Crop-Share Arrangements (continued)

Item	Total or per acre value	Rate or life	Annual charge	Landowner	Tenant	
Shared Items						
28. Fertilizer	Enter Charge Only For Items Shared		\$11.20	\$4.48	\$6.72	
29. Lime			\$12.00	\$4.80	\$7.20	
30.						
31.						
32.						
33. Total shared costs (Line 28-32)			\$23.20	\$9.28	\$13.92	
34. TOTAL COSTS (Line 26 + Line 33)			\$203.14	\$81.28	\$121.86	
35. Percent total costs= Line 34 Landowner (Tenant) Line 34 Total - Per Acre Charge			100%	40%	60%	
Use Lines 36-40 to Adjust to Desired Share						
36. Fertilizer	Add Items Previously Shared To Obtain Adjusted Shares		\$0.00	(\$4.48)	\$4.48	
37. Lime			\$0.00	(\$4.80)	\$4.80	
38.						
39.						
40.						
41. Total (Line 36-40)				(\$9.28)	\$9.28	
42. ADJUSTED TOTAL (Line 34 + Line 41)			\$203.14	\$72.00	\$131.14	
43. Adjusted percent total costs=Line 42 Landowner (Tenant) Line 42 Total - Per Acre Charge			100%	35%	65%	
Income						
44. Soybeans	35 bushels	x	\$6.25	\$218.75	\$77.53	\$141.22
45. SPARC Assessment	35 bushels	x	(\$0.031)	(\$1.09)	(\$0.38)	(\$0.71)
46.						
47. Total Income (Lines 44-46)				\$217.67	\$77.15	\$140.52
48. Percent crop share = Line 47 Landowner (Tenant) Line 47 Total - Per Acre Charge				\$100%	35%	65%

Other Considerations

As stated earlier, the amount of land rent should be related to soil productivity. When the productivity of a farm is below the general level of other farms in the area but is being rented for the customary division of crops or cash rent, then the landowner has the responsibility to bring the productivity of the farm up to the general level of the community. If the productivity of a farm is low because of low pH, low phosphate and potash level, or problem weeds, these problems can often be corrected in a year or two. However, soils that are badly eroded take a much longer time to increase their productivity. Successful methods for handling these situations are discussed in the following sections. Some cannot be corrected. Some differ-

ences in productivity result from soil properties that cannot be changed economically.

Lime Costs

As the soil pH drops below 6.1, fertilizer efficiency and plant growth decline. Research conducted by The University of Tennessee Agricultural Experiment Station has shown that more than 50 percent of the applied plant nutrients are unavailable for crop use as the pH drops into the low 5 range. As a general rule, two to three tons of agricultural limestone per acre are required every 4-5 years to maintain the soil pH at 6.1 or above. Because the tenant benefits from an application of

limestone in accordance with a soil test, he or she should share in the subsequent applications necessary to maintain a desirable soil pH.

Lime costs should be shared in the same proportion the crop is shared, providing both parties are responsible for lime and fertilizer. With cash rent, and in some instances when the landowner receives a crop-share rent, the tenant would pay all costs. With a five-year lease, the tenant has ample time to reap the benefits from an application of limestone if it is made during the first or second year of the lease. However, if the farm is leased on an annual basis, then some other provision must be made. The landowner may initially pay for the limestone and pro-rate the cost to the tenant over the time that benefits would accrue from the application. If the tenant is responsible for all costs, he or she would make an annual payment to the landowner. If both parties are responsible for lime costs, they would each pay their share of the annual pro-rated cost.

If the tenant pays the initial cost of the limestone, he or she should be guaranteed reimbursement for any unused portions. For example, suppose the tenant applies limestone and farms the land for two years. The two parties had previously agreed that the benefits from limestone would last four years. The landowner should reimburse the tenant for half of the cost of limestone and charge this to the next tenant.

Mechanical Conservation Practices

The extent to which soil erosion reduces crop yields depends upon the level of management, soil series, slope and subsoil. No current research could be found concerning the comparison of crop yields on terraced versus non-terraced land over time. However, soils which have a less favorable subsoil to support plant growth would show a larger percentage decrease in crop yields on severely eroded land compared to non-eroded land. If soil erosion is not held near soil loss tolerance, then crop yields will be reduced.

Waterways and silting basins are an integral part of the terrace system. Construction of these conservation practices is expensive and the ben-

efits are derived over a long period of time. Thus, the landowner should bear the cost of construction and the tenant pay the normal maintenance cost. What constitutes normal maintenance should be agreed on at the time the lease is developed.

Cultural Conservation Practices

No-tillage corn and soybean yields are equal to or higher than yields using conventional tillage. No-tillage has the potential to reduce soil loss to an acceptable level and, thus, may eliminate the necessity of mechanical practices on some fields.

A no-till planter costs more than a conventional planter; however, the overall estimated production costs of no-tillage corn and soybeans are about \$17 per acre less than conventional tillage. Seed and chemical cost is higher for no-tillage compared to conventional tillage but lower labor, fuel and machinery costs for no-tillage more than offset the increased seed and chemical costs. With leasing agreements in which the tenant pays for the seed, chemical and machinery costs, no adjustments are needed for no-tillage. Under a 1/2 - 1/2 crop-share lease, the landowner normally pays half of the seed, chemical, harvesting and fertilizer costs. The latter two costs are the same for no-tillage and conventional tillage, so no adjustments are needed. If the tenant elects to use no-till, then he or she should pay the difference in seed and chemical cost of no-tillage versus conventional tillage because he or she realizes lower labor and machinery costs. In some instances, the landowner may be willing to pay half of the additional seed and chemical costs or accept a lower rent just to get his or her land farmed under a no-tillage system of production to reduce soil loss. Drilling soybeans, another reduced-tillage option, reduces erosion by 15 to 20 percent compared to conventionally-planted soybeans. There is essentially no difference in costs or yields of drilled soybeans versus conventionally-planted soybeans. Thus, no lease adjustments are needed.

Summary

Opportunity for increased farm income and more satisfactory relationships provides incentive to improve farm lease arrangements. If equity considerations are important, the contribution approach to lease development should be studied. Breaking the bonds of tradition is not always easy but is justified in many instances. Modern agriculture demands the use of up-to-date production methods and farm leasing principles.

Cash rental arrangements are quite popular in Tennessee and are likely to remain so, at least in the near future. They are especially attractive to landowners who do not wish to be involved in making management and marketing decisions or in sharing production expenses. However, many cash leases have some serious limitations. The major ones include: (1) short-term (often one year), oral agreements which discourage production practices with a longer payoff, (2) heavy reliance on tradition

without consideration of the value of crop input contributions by each party or the tenant's ability to pay, and (3) failure to adequately relate cash rent to soil productivity. These and other shortcomings of many cash leases in Tennessee can be overcome through: (1) careful consideration of factors which determine a lease price that is fair to both landowner and tenant, and (2) the use of longer-term leases that encourage more profitable farming practices and better personal relationships. The potential problem related to fixed cash rent for a three- to five-year lease can be solved with the use of a flexible cash rental arrangement which adjusts from year to year depending on changes in crop prices, yields and/or production costs.

Improved cash leases can lead to higher farm income, reduced soil and water loss in many cases, and more enduring personal relationships. These improvements can result from the use of farm economic principles which are designed to promote increased crop income and an equitable division of this higher income.

Contact your area farm management specialist or county Extension office for the computer version of the following worksheets.

Blank Worksheets

Table 1. Worksheet for Estimating the Amount a Tenant Can Afford to Pay as Cash Land Rent

A. Gross Value of Crops Produced					
A	B	C	D	E	F
Crop	Acres	Expected Yield	Production (B x C)	Expected Price	Gross Revenue (D x E)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
				Total	_____
		A	B	C	D
		Crop	Acres	Cost (\$/acre)	Total Cost (B x C)
B. Less Costs:					
1. Variable		_____	_____	_____	_____
		_____	_____	_____	_____
				Total Variable Costs	_____
2. Fixed		_____	_____	_____	_____
		_____	_____	_____	_____
				Total Fixed Costs	_____
3. Labor		_____	_____	_____	_____
		_____	_____	_____	_____
				Total Labor Costs	_____
4. Management Allowance					
a. Gross Revenue		_____	_____	_____	_____
b. Percent		_____	_____	_____	_____
5. Total Specified Costs (lines 1 through 4)					_____
C. Maximum Rent Which Can be Paid for Land (line 4a less line 5)					_____
D. Maximum Cash Rental Rate Per Acre (line C divided by # acres)					_____

Table 2. Calculating Landowner's Costs in Estimating a Fixed Cash Rent

1. Acres		_____
2. Value/Acre (\$/acre)		_____
3. Interest Rate (%)		_____
4. Interest on Investment	(line 1 x line 2 x line 3)	_____
5. Repairs (\$/acre)		_____
6. Real Estate Tax Rate (\$/acre)		_____
7. Real Estate Taxes	(line 1 x line 6)	_____
8. Depreciation on Improvements		
a. Buildings		_____
b. Fences		_____
Total	(line 8a + 8b)	_____
9. Total Costs	(line 4 + line 5 + line 7 + line 8)	_____
10. Per-acre Costs	(line 9 / line 1)	_____

Table 3. Landowner's Adjusted Share Rent

1. Rental Rate	_____	
2. Adjustment Percent	_____	%
3. Adjustment (line 1 x line 2)	_____	
4. Adjusted Share Rent (line 1 - line 3)	_____	

Table 4. Comparison of Cash Rental Rates Using Different Approaches

1. Prevailing cash rental rate		
2. Tenant's ability to pay (maximum)	Table 1	_____
3. Landowner's cost	Table 2	_____
4. Landowner's adjusted share rent	Table 3	_____

Table 6. Crop Approach to Crop-Share Arrangements

Crop _____		Acres _____		Shares: Landowner _____		Tenant _____	
Item	Total or per acre value	Rate or life	Annual charge	Landowner	Tenant		
Non-shared Items							
1.	Land						
2.	Real estate tax						
3.	Land maintenance						
4.	Crop machinery interest						
5.	Depreciation						
6.	Repairs						
7.	Insurance						
8.	Taxes						
9.	Labor						
10.	Management						
11.	Fertilizer						
12.	Lime						
13.	Seed						
14.	Fuel-oil						
15.	Herbicides						
16.	Insecticides						
17.	Harvesting						
18.	Drying						
19.	Hauling						
20.	Crop insurance						
21.	Other						
22.							
23.							
24.							
25.							
26.	Total non-shared costs (Lines 1-25)						
27.	Percent non-shared costs= Line 26 Landowner (Tenant) Line 26 Total-Per Acre Charge						

Table 6. Crop Approach to Crop-Share Arrangements (continued)

Item	Total or per acre value	Rate or life	Annual charge	Landowner	Tenant
Shared Items					
28.	Enter Charge Only For Items Shared				
29.					
30.					
31.					
32.					
33.	Total shared costs (Line 28-32)				
34.	TOTAL COSTS (Line 26 + Line 33)				
35.	Percent total costs= Line 34 Landowner (Tenant) Line 34 Total - Per Acre Charge				
Use Lines 36-40 to Adjust to Desired Share					
36.	Add Items Previously Shared To Obtain Adjusted Shares				
37.					
38.					
39.					
40.					
41.	Total (Line 36-40)				
42.	ADJUSTED TOTAL (Line 34 + Line 41)				
43.	Adjusted percent total costs=Line 42 Landowner (Tenant) Line 42 Total - Per Acre Charge				
Income					
44.					
45.					
46.					
47.	Total Income (Lines 44-46)				
48.	Percent crop share = Line 47 Landowner (Tenant) Line 47 Total - Per Acre Charge				

Information contained on pages 13 through 17 is based on *Crop Share or Crop Share/Cash Rental Arrangements for Your Farm*, North Central Regional Extension Publication 105, reprinted 1992. The original NCR Extension Publication 105 was written in 1981 by Don D. Pretzer, Assistant Director, Extension Agriculture and Natural Resources, Kansas State University, with assistance from ad hoc committee members Myron Bennet, University of Missouri, and Ken H. Thomas, University of Minnesota. Revised by Larry N. Langemeier, professor and Extension agricultural economist, farm management studies, Kansas State University, 1989.



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