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Analyzing
Dryland Crop Leases

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ANALYZING DRYLAND CROP LEASES[1]

Herbert R. Hinman[2]

INTRODUCTION

Approximately half of all crop producing acreage in the dryland production areas of eastern Washington is leased under some sort of landowner - lessee agreement. Crop share leases tend to be the more popular type of lease. However, cash leases are becoming more and more common.

Generally, there is a mutual desire by the landowner and lessee to do what is fair in negotiating a land lease agreement. Often this means determining what is customary for the surrounding area. However, customary rental practices may not accurately reflect the contributions of resources made by the specific landowner and lessee. Because of the considerable variation found between farms in land productivity, land value, production technology, and in labor, management, and operating capital contributions by the landowner and lessee. Thus, even though both parties may want a fair lease, use of customary rates may result in an unintended transfer of income from one party to the other. The best way of resolving this potential problem is for the landowner and lessee to periodically review their lease agreement as to respective contributions and distributions and adjust the lease agreement accordingly.

The objectives of this publication are to provide a method for landowners and tenants to determine if their current land lease is profitable to both parties and to provide a method by which changes in the current lease arrangement can be evaluated in terms of a more equitable distribution between landowner and tenant. In addition, this publication provides a means by which landowner and tenant can estimate the cash rent amount they each can afford in a cash rental arrangement and also describes the workings of various types of flex-lease arrangements that may be appealing to certain landowners and tenants.

WHY DOES AGRICULTURAL LAND HAVE VALUE?

Agricultural land has value to the landowner for many different reasons other than just agricultural production. In addition to agricultural production, the value of agricultural land to a landowner also comes from the security of tenure, the ability to use land as loan collateral, management independence, a hedge against inflation, and the pride of ownership, along with other non-agricultural benefits it may provide. The only value a lessee receives from leased land is from the agricultural production it provides. Thus, from the start, it must be realized that the value of agricultural land to the landowner and to the lessee are not the same.

The traditional approach for determining the value of land for agricultural production has been the income capitalization approach, V = P/i, where P = average annual net income, i =

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[1]Parts of the material presented in this manuscript have been adapted from: Willett, Gayle, Analyzing Your Landlease Agreement, EB1367, Washington State University Extension, 1986.

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desired return before taxes, and V = estimated land value. Thus, in a situation where the average annual net income returned from the land is $72 per acre, and the desired annual return before taxes is 8%, the estimated value of the land for agricultural production purposes is:

$72.00 / .08 = $900.00/acre.

Therefore, if this land is selling for $1,200/acre, it needs to be realized that the value of this land for agricultural purposes is $900.00 and that the remaining value is due to other factors associated with land ownership (security of tenure, loan collateral, management independence, hedge against inflation, pride of ownership, etc.) that are of no value to the tenant. So, when a landowner is determining the return that should be forthcoming from the rental of farmland, it must be remembered that the market value of the land does not necessarily represent the agricultural production value of the land.

ANALYZING A CROP SHARE LEASE

Determining a fair and equitable crop share lease would be simple if contributions by both parties were in cash. The crop share would simply be proportional to the cash contributions by each party. However, sizable contributions occur in the form of land, machinery, labor, and management - inputs that do not necessarily carry explicit monetary values. Moreover, values expressed by the landowner and lessee may differ substantially. Therefore, in analyzing the profitability of a given crop share lease, one must look at the estimated monetary values that each party contributes to the production of the product and compare these values with the estimated returns each party receives from the sale of the product. Most often the net returns to the landowner are measured as returns to land while the net returns to the lessee are measured as returns to management and risk. This approach will be demonstrated with an annual crop example, then with an example using two annual crops, and then with a summer fallow - winter wheat example.

Example 1

The operator operates 1,000 acres that includes a 200-acre rented tract of wheat ground (every other year this rented tract of ground grows lentils). The value of the land is $1,200 per acre. The landowner pays the land taxes of $6.00 per acre and one-third of the fertilizer and crop insurance costs for the wheat crop and receives one-third of the wheat crop. The lessee is responsible for supplying all other inputs including labor, machinery, and management used on the rented ground. The lessee's machinery complement is valued at $210,000. The lessee pays an average of 9% interest on outstanding machinery loans and, therefore, desires a 9% return from the machinery investment. In addition, the lessee supplies 150 hours of labor valued by the lessee at $16 per hour. The estimated production level is 75 bushels per acre with the estimated price for wheat to the producer being $3.75 per bushel, which includes government payments minus marketing costs.

The analysis of the crop share lease is done using a spreadsheet, named ShareLease, that is one of several spreadsheets in the workbook, Land Lease Analyzer, available in both Excel and Quattro Pro. This spreadsheet, with the values and results for this example, is shown in Table 1 on pages 4 and 5.

Practically all values for the ShareLease spreadsheet should come from the operator's (lessee's) records. However, the allocation of machinery expenses needs additional explanation. In the above paragraph, it was stated that the lessee's machine complement was valued at $210,000. The percent of the machinery complement value used on the leased land during the year needs to be determined and entered into the spreadsheet. Thus, for this example situation, it is assumed that over the 1,000-acre farm there are 500 acres of wheat and 500 acres of lentils. Sixty-percent of the equipment is used on the lentil ground and 40% of the equipment is used on the wheat ground. Therefore, since the leased land represents 40% of the total wheat land (200 acres/500 acres) a value of $33,600 [($210,000 x .40) x .40] or 16% of the total value is assigned as the value of the machine complement used on the leased land. In like manner, 16% of the total annual machinery replacement, repair, maintenance, insurance, taxes, and housing costs are assigned to the leased land. Annual machinery replacement, the average annual amount of dollars spent replacing older equipment, also serves as a proxy for annual depreciation.

The results of the ShareLease spreadsheet for winter wheat, shown in Table 1, reveals that under the given assumptions, the net return to the landowner is $15,391, which is a 6.41% return to the agricultural value of the landowners land investment. On the other hand, the lessee receives a 9% return on his machinery investment ($3,024), $16 per hour for the 150 hours of operator labor supplied ($2,400), and $2,152.50 (3.83% of gross returns) for management and risk. Whether or not this is an acceptable lease from both parties' point of view can only be determined by the parties themselves. However, with the ShareLease spreadsheet, certain variables such as share arrangements, price, and yield assumptions, etc., can be changed to determine if a more satisfactory lease arrangement may be derived. For example, if the yield level dropped 5 bushels to 70 bushels per acre, the landowner receives $14,141 or a 5.89% return to the agricultural value of the land whereas the lessee receives -$347.63 (-0.66% of gross returns) for management and risk.

The ShareLease spreadsheet also shows the "Percent of Contribution" by the landowner and the lessee once each party specifies the minimum amount of return they believe they should receive for their respective contributions in land and management. In the given example, the landowner would like a minimum return of 5% on the value of land and the lessee would like 5% of gross returns as the value of management. Given these desired returns, the landowner's percent contribution to the production of the output is 28.7% while receiving 33.3% of the crop. The lessee's contribution, on the other hand, is 71.3% while receiving 66.7% of the crop. Thus, several things could be done to make this a more equitable lease.

Table 2 shows an analysis of the given crop share lease with everything remaining the same as in the previous analysis except that both the chemical costs and the fertilizer costs are shared on a 1/3 – 2/3 basis. With this change in the lease agreement, both parties are making more than their desired return on land and management, respectively, and although the 1/3 – 2/3 crop share remains in effect, the landowner is contributing 32.8% of the expense towards the production of the crop where the lessee is now contributing 67.2% of the expense.

Table 3 shows an analysis of the given crop share lease with everything remaining the same as in the first analysis except crop share along with fertilizer and crop insurance costs are a 28% - 72% share basis. With this change in the lease agreement, both parties are also making more than their desired return on land and management, respectively.

TABLE 1. Analyzing Crop Share Lease – Example 1.

SHARELEASE: Analyzes Crop Share Leases.

Crop Share Information:

Value of Land per Acre:	$1,200.00		
Crop:	Wheat		
Number of Acres:	200.00		
Estimated Production Units per Acre:	75.00		
Price per Production Unit Sold:	$3.75		
Percent Crop Share to Lessee:	66.67%		
Percent Crop Share to Landowner:	33.33%	100.00%	100.00%

Estimated Receipts:

Crop:	Wheat		
Crop Receipts:	56,250.00	0.00	0.00
Landowner Share:	18,748.13	0.00	0.00
Lessee Share:	37,501.88	0.00	0.00

	Total Receipts	Landowner Share	Lessee Share
Total Receipts:	56,250.00	18,748.13	37,501.88

Machinery Expenses:

Value of Machine Complement Used on Leased Land:	33,600.00
Desired Percent Return on Machinery Value:	9.00%

	Total Expense	Landowner Share	Lessee Share
Machinery Investment Expense:	3,024.00		3,024.00
Value of the Annual Machine Replacement Cost Assigned to the Leased Land:	3,360.00		3,360.00
Machinery Repair and Maintenance Assigned to the Leased Land:	3,500.00		3,500.00
Machinery Insurance, Taxes, and Housing Assigned to the Leased Land:	1,350.00		1,350.00
Total Machinery Expenses:	11,234.00	0.00	11,234.00

Building and Fence Expenses on Leased Land:

Depreciation:			
Repairs and Maintenance:			
Building Insurance:			
Total Building and Fence Expenses:	0.00	0.00	0.00

Real Estate Taxes on Leased Land:	1,200.00	1,200.00	0.00

TABLE 1. (continued) Analyzing Crop Share Lease – Example 1.

Operating Expenses on Leased Land:

Crop :	Wheat								
	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share
Hired Labor:	1,545.00		1,545.00						
Operator Labor:	2,400.00		2,400.00						
Fertilizer:	5,283.00	1,761.00	3,522.00						
Seed:	2,350.00		2,350.00						
Fuel and Lubricants:	1,402.00		1,402.00						
Herbicides and Pesticides:	6,554.00		6,554.00						
Crop Insurance:	1,188.00	396.00	792.00						
Machine Work:	3,330.00		3,330.00						
Custom Aerial:									
Overhead:	1,110.35		1,110.35						
Interest on Operating Capital:	1,110.03		1,110.03						
Total Operating Expenses:	26,272.38	2,157.00	24,115.38	0.00	0.00	0.00	0.00	0.00	0.00

Summary of Results:

		Landowner Share	Lessee Share
Total Gross Receipts:	56,250.00	18,748.13	37,501.88
Total Gross Expenses:	38,706.38	3,357.00	35,349.38
Net Receipts:	17,543.62	15,391.13	2,152.50

Total Acres:	200.00
Value of Land:	240,000.00
$ Return to Land:	15,391.13
% Return to Land:	6.41%

$ Return to Management:	2,152.50
% of Gross Receipts:	3.83%

Percent of Contribution:

Landowner's desired % return on land value	5.0%
Lessee's desired % of gross revenues for management	5.0%
Landowner's gross expense including % return to land	15,357.00
Lessee's gross expense including % return to mgmt.	38,161.88
Landowner's % contribution	28.7%
Lessee's % contribution	71.3%

TABLE 2. Analyzing Crop Share Lease – Example 1 (Fertilizer and Chemicals Shared 1/3 – 2/3).

SHARELEASE: Analyzes Crop Share Leases.

Crop Share Information:

Value of Land per Acre:	$1,200.00		
Crop:	Wheat		
Number of Acres:	200.00		
Estimated Production Units per Acre:	75.00		
Price per Production Unit Sold:	$3.75		
Percent Crop Share to Lessee:	66.67%		
Percent Crop Share to Landowner:	33.33%	100.00%	100.00%

Estimated Receipts:

Crop:	Wheat		
Crop Receipts:	56,250.00	0.00	0.00
Landowner Share:	18,748.13	0.00	0.00
Lessee Share:	37,501.88	0.00	0.00

	Total Receipts	Landowner Share	Lessee Share
Total Receipts:	56,250.00	18,748.13	37,501.88

Machinery Expenses:

Value of Machine Complement Used on Leased Land:	33,600.00
Desired Percent Return on Machinery Value:	9.00%

	Total Expense	Landowner Share	Lessee Share
Machinery Investment Expense:	3,024.00		3,024.00
Value of the Annual Machine Replacement Cost Assigned to the Leased Land:	3,360.00		3,360.00
Machinery Repair and Maintenance Assigned to the Leased Land:	3,500.00		3,500.00
Machinery Insurance, Taxes, and Housing Assigned to the Leased Land:	1,350.00		1,350.00
Total Machinery Expenses:	11,234.00	0.00	11,234.00

Building and Fence Expenses on Leased Land:

Depreciation:			
Repairs and Maintenance:			
Building Insurance:			
Total Building and Fence Expenses:	0.00	0.00	0.00

Real Estate Taxes on Leased Land:	1,200.00	1,200.00	0.00

TABLE 2. Analyzing Crop Share Lease for Winter Wheat – Example 1 (Fertilizer and Chemicals Shared 1/3 – 2/3).

Operating Expenses on Leased Land:

Crop :	Wheat								
	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share
Hired Labor:	1,545.00		1,545.00						
Operator Labor:	2,400.00		2,400.00						
Fertilizer:	5,283.00	1,761.00	3,522.00						
Seed:	2,350.00		2,350.00						
Fuel and Lubricants:	1,402.00		1,402.00						
Herbicides and Pesticides:	6,554.00	2,184.67	4,369.33						
Crop Insurance:	1,188.00	396.00	792.00						
Machine Work:	3,330.00		3,330.00						
Custom Aerial:									
Overhead:	1,110.35		1,110.35						
Interest on Operating Capital:	1,110.03		1,110.03						
Total Operating Expenses:	26,272.38	4,341.67	21,930.71	0.00	0.00	0.00	0.00	0.00	0.00

Summary of Results:

		Landowner Share	Lessee Share
Total Gross Receipts:	56,250.00	18,748.13	37,501.88
Total Gross Expenses:	38,706.38	5,541.67	33,164.71
Net Receipts:	17,543.62	13,206.46	4,337.16

Total Acres:	200.00
Value of Land:	240,000.00
$ Return to Land:	13,206.46
% Return to Land:	5.50%

$ Return to Management:	4,337.16
% of Gross Receipts:	7.71%

Percent of Contribution:

Landowner's desired % return on land value	5.0%
Lessee's desired % of gross revenues for management	5.0%
Landowner's gross expense including % return to land	17,541.67
Lessee's gross expense including % return to mgmt.	35,977.21
Landowner's % contribution	32.8%
Lessee's % contribution	67.2%

TABLE 3. Analyzing Crop Share Lease – Example 1 (28% - 72% Crop Share).

SHARELEASE: Analyzes Crop Share Leases.

Crop Share Information:

Value of Land per Acre:	$1,200.00		
Crop:	Wheat		
Number of Acres:	200.00		
Estimated Production Units per Acre:	75.00		
Price per Production Unit Sold:	$3.75		
Percent Crop Share to Lessee:	72.00%		
Percent Crop Share to Landowner:	28.00%	100.00%	100.00%

Estimated Receipts:

Crop:	Wheat		
Crop Receipts:	56,250.00	0.00	0.00
Landowner Share:	15,750.00	0.00	0.00
Lessee Share:	40,500.00	0.00	0.00

	Total Receipts	Landowner Share	Lessee Share
Total Receipts:	56,250.00	15,750.00	40,500.00

Machinery Expenses:

Value of Machine Complement Used on Leased Land:	33,600.00
Desired Percent Return on Machinery Value:	9.00%

	Total Expense	Landowner Share	Lessee Share
Machinery Investment Expense:	3,024.00		3,024.00
Value of the Annual Machine Replacement Cost Assigned to the Leased Land:	3,360.00		3,360.00
Machinery Repair and Maintenance Assigned to the Leased Land:	3,500.00		3,500.00
Machinery Insurance, Taxes, and Housing Assigned to the Leased Land:	1,350.00		1,350.00
Total Machinery Expenses:	11,234.00	0.00	11,234.00

Building and Fence Expenses on Leased Land:

Depreciation:			
Repairs and Maintenance:			
Building Insurance:			
Total Building and Fence Expenses:	0.00	0.00	0.00

Real Estate Taxes on Leased Land:	1,200.00	1,200.00	0.00

TABLE 3. (continued) Analyzing Crop Share Lease – Example 1 (28% - 72% Crop Share).

Operating Expenses on Leased Land:

Crop :	Wheat								
	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share
Hired Labor:	1,545.00		1,545.00						
Operator Labor:	2,400.00		2,400.00						
Fertilizer:	5,283.00	1,479.24	3,803.76						
Seed:	2,350.00		2,350.00						
Fuel and Lubricants:	1,402.00		1,402.00						
Herbicides and Pesticides:	6,554.00		6,554.00						
Crop Insurance:	1,188.00	332.64	855.36						
Machine Work:	3,330.00		3,330.00						
Custom Aerial:									
Overhead:	1,110.35		1,110.35						
Interest on Operating Capital:	1,110.03		1,110.03						
Total Operating Expenses:	26,272.38	1,811.88	24,460.50	0.00	0.00	0.00	0.00	0.00	0.00

Summary of Results:

		Landowner Share	Lessee Share
Total Gross Receipts:	56,250.00	15,750.00	40,500.00
Total Gross Expenses:	38,706.38	3,011.88	35,694.50
Net Receipts:	17,543.62	12,738.12	4,805.50
Total Acres:	200.00		
Value of Land:	240,000.00		
$ Return to Land:	12,738.12		
% Return to Land:	5.31%		
$ Return to Management:	4,805.50		
% of Gross Receipts:	8.54%		

Percent of Contribution:

Landowner's desired % return on land value	5.0%
Lessee's desired % of gross revenues for management	5.0%
Landowner's gross expense including % return to land	15,011.88
Lessee's gross expense including % return to mgmt.	38,507.00
Landowner's % contribution	28.0%
Lessee's % contribution	72.0%

Example 2

Example 2 is an extension of Example 1 in that the expenses and returns from the following year's lentil crop have been added. Although the leased land is used in a two-year rotation (200 acres of winter wheat one year and 200 acres of lentils the next), the annual average can be used when entering the expense and return data for winter wheat and for lentils. Thus, it can be assumed that the 200 acres of leased land uses 100 acres for winter wheat and 100 acres for lentils. As with the wheat crop, the landowner pays the land taxes of $6.00 per acre and one-third of the fertilizer and crop insurance costs for the lentil crop, and receives one-third of the lentil crop. The lessee is responsible for supplying all other inputs including labor, machinery, and management used on the rented ground. As in Example 1, the lessee's machinery complement is valued at $210,000 from which is desired a 9% return from the investment. The lessee values his/her labor at $16 per hour. The estimated production level is 15 hundredweight and the estimated price to the producer for lentils is $18.50 per hundredweight after marketing costs are deducted. The machinery data is entered for the entire 200 acres and is the sum of the machinery expenses for both the wheat and the lentils, each being produced on 100 acres. The results of this analysis are shown on the ShareLease spreadsheet in Table 4.

Since the leased land is evenly split between winter wheat and lentils, and represents 20% of the total farmland, a value of $42,000 [($210,000 x (200/1000)] is assigned as the value of machine complement used on the leased land. Therefore, 20% of the total annual machinery replacement, repair, maintenance, insurance, taxes, and housing costs are assigned to the leased land.

The results of the ShareLease spreadsheet, shown in Table 4, reveals that under the given assumptions of Example 2, the net return to the landowner is $16,095, which is a 6.71% return to the agricultural value of the landowner's land. The lessee receives a 9% return on their machinery investment ($3,780), $16 per hour for operator labor supplied ($2,163.60), and -$1,640 (-2.93% of gross returns) for operator management. As with Example 1, the ShareLease spreadsheet can be used to change certain variables, such as share arrangements, price, and yield assumptions, etc., to determine if a more satisfactory lease arrangement may be derived. For instance, as shown in Table 5, if crop share along with fertilizer and crop insurance costs were shared on a 25% - 75%, the lessee would receive $2,682 return to management (4.8% of gross returns) while the landowner receives a 4.9% return on the agricultural value of land. Both parties receive a little less than their desired returns for land and management, but with the gross returns being divided as to contribution, both landowner and lessee receive positive returns.

Example 3

A lease for summer fallow - winter wheat is handled similarly to a lease for two annual crops. The only difference is that under a summer fallow - winter wheat rotation the operator summer fallows in one year but does not receive the benefits of the summer fallow costs until the end of harvest the following year. Therefore, an interest cost for a year of non-recovered summer fallow expense must be added to the cost of the winter wheat. Thus, without going into detail as to the specifics of the example, other than that given in the ShareLease spreadsheet displayed in Table 6, everything is done as in Example 2 in calculating landowner and lessee

TABLE 4. Analyzing Crop Share Lease – Example 2.

SHARELEASE: Analyzes Crop Share Leases.

Crop Share Information:

Value of Land per Acre:	$1,200.00

Crop:	Wheat	Lentils	
Number of Acres:	100.00	100.00	
Estimated Production Units per Acre:	75.00	15.00	
Price per Production Unit Sold:	$3.75	$18.50	
Percent Crop Share to Lessee:	66.67%	66.67%	
Percent Crop Share to Landowner:	33.33%	33.33%	100.00%

Estimated Receipts:

Crop:	Wheat	Lentils	
Crop Receipts:	28,125.00	27,750.00	0.00
Landowner Share:	9,374.06	9,249.08	0.00
Lessee Share:	18,750.94	18,500.93	0.00

	Total Receipts	Landowner Share	Lessee Share
Total Receipts:	55,875.00	18,623.14	37,251.86

Machinery Expenses:

Value of Machine Complement Used on Leased Land:	42,000.00
Desired Percent Return on Machinery Value:	9.00%

	Total Expense	Landowner Share	Lessee Share
Machinery Investment Expense:	3,780.00		3,780.00
Value of the Annual Machine Replacement Cost Assigned to the Leased Land:	4,200.00		4,200.00
Machinery Repair and Maintenance Assigned to the Leased Land:	4,140.00		4,140.00
Machinery Insurance, Taxes, and Housing Assigned to the Leased Land:	1,670.00		1,670.00
Total Machinery Expenses:	13,790.00	0.00	13,790.00

Building and Fence Expenses on Leased Land:

Depreciation:			
Repairs and Maintenance:			
Building Insurance:			
Total Building and Fence Expenses:	0.00	0.00	0.00

Real Estate Taxes on Leased Land:	1,200.00	1,200.00	0.00

TABLE 4. (continued) Analyzing Crop Share Lease – Example 2.

Operating Expenses on Leased Land:

Crop :	Wheat			Lentils					
	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share
Hired Labor:	772.50		772.50	963.00		963.00			
Operator Labor:	1,200.00		1,200.00	963.00		963.00			
Fertilizer:	2,641.50	880.50	1,761.00						
Seed:	1,175.00		1,175.00	350.00		350.00			
Fuel and Lubricants:	701.00		701.00	1,672.00		1,672.00			
Herbicides and Pesticides:	3,277.00		3,277.00	4,418.00		4,418.00			
Crop Insurance:	594.00	198.00	396.00	750.00	250.00	500.00			
Machine Work:	1,665.00		1,665.00						
Custom Aerial:				500.00		500.00			
Drill Rental:				750.00		750.00			
Custom Swath:				1,500.00		1,500.00			
Sprayer Rental:				350.00		350.00			
Overhead:	555.18		555.18	686.00		686.00			
Interest on Operating Capital:	555.01		555.01	392.00		392.00			
Total Operating Expenses:	13,136.19	1,078.50	12,057.69	13,294.00	250.00	13,044.00	0.00	0.00	0.00

Summary of Results:

		Landowner Share	Lessee Share
Total Gross Receipts:	55,875.00	18,623.14	37,251.86
Total Gross Expenses:	41,420.19	2,528.50	38,891.69
Net Receipts:	14,454.81	16,094.64	(1,639.83)
Total Acres:	200.00		
Value of Land:	240,000.00		
$ Return to Land:	16,094.64		
% Return to Land:	6.71%		
$ Return to Management:	-1,639.83		
% of Gross Receipts:	-2.93%		

Percent of Contribution:

Landowner's desired % return on land value	5.0%
Lessee's desired % of gross revenues for management	5.0%
Landowner's gross expense including % return to land	14,528.50
Lessee's gross expense including % return to mgmt.	41,685.44
Landowner's % contribution	25.8%
Lessee's % contribution	74.2%

TABLE 5. Analyzing Crop Share Lease – Example 2 (25% - 75% Crop Share).

SHARELEASE: Analyzes Crop Share Leases.

Crop Share Information:

Value of Land per Acre:	$1,200.00

Crop:	Wheat	Lentils	
Number of Acres:	100.00	100.00	
Estimated Production Units per Acre:	75.00	15.00	
Price per Production Unit Sold:	$3.75	$18.50	
Percent Crop Share to Lessee:	75.00%	75.00%	
Percent Crop Share to Landowner:	25.00%	25.00%	100.00%

Estimated Receipts:

Crop:	Wheat	Lentils	
Crop Receipts:	28,125.00	27,750.00	0.00
Landowner Share:	7,031.25	6,937.50	0.00
Lessee Share:	21,093.75	20,812.50	0.00

	Total Receipts	Landowner Share	Lessee Share
Total Receipts:	55,875.00	13,968.75	41,906.25

Machinery Expenses:

Value of Machine Complement Used on Leased Land:	42,000.00
Desired Percent Return on Machinery Value:	9.00%

	Total Expense	Landowner Share	Lessee Share
Machinery Investment Expense:	3,780.00		3,780.00
Value of the Annual Machine Replacement Cost Assigned to the Leased Land:	4,200.00		4,200.00
Machinery Repair and Maintenance Assigned to the Leased Land:	4,140.00		4,140.00
Machinery Insurance, Taxes, and Housing Assigned to the Leased Land:	1,670.00		1,670.00
Total Machinery Expenses:	13,790.00	0.00	13,790.00

Building and Fence Expenses on Leased Land:

Depreciation:			
Repairs and Maintenance:			
Building Insurance:			
Total Building and Fence Expenses:	0.00	0.00	0.00

Real Estate Taxes on Leased Land:	1,200.00	1,200.00	0.00

TABLE 5. (continued) Analyzing Crop Share Lease – Example 2 (25% - 75% Crop Share).

Operating Expenses on Leased Land:

Crop :	Wheat			Lentils					
	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share
Hired Labor:	772.50		772.50	963.00		963.00			
Operator Labor:	1,200.00		1,200.00	963.00		963.00			
Fertilizer:	2,641.50	660.38	1,981.13						
Seed:	1,175.00		1,175.00	350.00		350.00			
Fuel and Lubricants:	701.00		701.00	1,672.00		1,672.00			
Herbicides and Pesticides:	3,277.00		3,277.00	4,418.00		4,418.00			
Crop Insurance:	594.00	148.50	445.50	750.00	187.50	562.50			
Machine Work:	1,665.00		1,665.00						
Custom Aerial:				500.00		500.00			
Drill Rental:				750.00		750.00			
Custom Swath:				1,500.00		1,500.00			
Sprayer Rental:				350.00		350.00			
Overhead:	555.18		555.18	686.00		686.00			
Interest on Operating Capital:	555.01		555.01	392.00		392.00			
Total Operating Expenses:	13,136.19	808.88	12,327.32	13,294.00	187.50	13,106.50	0.00	0.00	0.00

Summary of Results:

		Landowner Share	Lessee Share
Total Gross Receipts:	55,875.00	13,968.75	41,906.25
Total Gross Expenses:	41,420.19	2,196.38	39,223.82
Net Receipts:	14,454.81	11,772.38	2,682.44
Total Acres:	200.00		
Value of Land:	240,000.00		
$ Return to Land:	11,772.38		
% Return to Land:	4.91%		
$ Return to Management:	2,682.44		
% of Gross Receipts:	4.80%		

Percent of Contribution:

Landowner's desired % return on land value	5.0%
Lessee's desired % of gross revenues for management	5.0%
Landowner's gross expense including % return to land	14,196.38
Lessee's gross expense including % return to mgmt.	42,017.57
Landowner's % contribution	25.3%
Lessee's % contribution	74.7%

TABLE 6. Analyzing Crop Share Lease - Example 3.

SHARELEASE: Analyzes Crop Share Leases.

Crop Share Information:

Value of Land per Acre:	$650.00

Crop:	SumFal	Wheat	
Number of Acres:	400.00	400.00	
Estimated Production Units per Acre:	0.00	55.00	
Price per Production Unit Sold:	$0.00	$3.75	
Percent Crop Share to Lessee:	0.00%	66.67%	
Percent Crop Share to Landowner:	100.00%	33.33%	100.00%

Estimated Receipts:

Crop:	SumFal	Wheat	
Crop Receipts:	0.00	82,500.00	0.00
Landowner Share:	0.00	27,497.25	0.00
Lessee Share:	0.00	55,002.75	0.00

	Total Receipts	Landowner Share	Lessee Share
Total Receipts:	82,500.00	27,497.25	55,002.75

Machinery Expenses:

Value of Machine Complement Used on Leased Land:	82,000.00
Desired Percent Return on Machinery Value:	9.00%

	Total Expense	Landowner Share	Lessee Share
Machinery Investment Expense:	7,380.00		7,380.00
Value of the Annual Machine Replacement Cost Assigned to the Leased Land:	8,200.00		8,200.00
Machinery Repair and Maintenance Assigned to the Leased Land:	7,100.00		7,100.00
Machinery Insurance, Taxes, and Housing Assigned to the Leased Land:	1,925.00		1,925.00
Total Machinery Expenses:	24,605.00	0.00	24,605.00

Building and Fence Expenses on Leased Land:

Depreciation:			
Repairs and Maintenance:			
Building Insurance:			
Total Building and Fence Expenses:	0.00	0.00	0.00

Real Estate Taxes on Leased Land:	3,000.00	3,000.00	0.00

TABLE 6. (continued) Analyzing Crop Share Lease – Example 3.

Operating Expenses on Leased Land:

Crop :	SumFal			Wheat					
	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share	Total Expense	Landowner Share	Lessee Share
Hired Labor:	1,770.00		1,770.00	1,186.00		1,186.00			
Operator Labor:	1,770.00		1,770.00	1,186.00		1,186.00			
Fertilizer:	7,536.00	2,512.00	5,024.00	1,040.00	346.67	693.33			
Seed:				3,744.00		3,744.00			
Fuel and Lubricants:	1,645.00		1,645.00	704.00		704.00			
Herbicides and Pesticides:				960.00		960.00			
Crop Insurance:				676.00	225.33	450.67			
Machine Work:				1,872.00		1,872.00			
Custom Aerial:				1,320.00		1,320.00			
Perennial Weed Control:	160.00	160.00		160.00	160.00				
Interest on SumFal Cost:				2,489.00	392.00	2,097.00			
Overhead:	736.00		736.00	740.00		740.00			
Interest on Operating Capital:	484.00	188.00	296.00	670.00	85.00	585.00			
Total Operating Expenses:	14,101.00	2,860.00	11,241.00	16,747.00	1,209.00	15,538.00	0.00	0.00	0.00

Summary of Results:

		Landowner Share	Lessee Share
Total Gross Receipts:	82,500.00	27,497.25	55,002.75
Total Gross Expenses:	58,453.00	7,069.00	51,384.00
Net Receipts:	24,047.00	20,428.25	3,618.75
Total Acres:	800.00		
Value of Land:	520,000.00		
$ Return to Land:	20,428.25		
% Return to Land:	3.93%		
$ Return to Management:	3,618.75		
% of Gross Receipts:	4.39%		

Percent of Contribution:

Landowner's desired % return on land value	5.0%
Lessee's desired % of gross revenues for management	5.0%
Landowner's gross expense including % return to land	33,069.00
Lessee's gross expense including % return to mgmt.	55,509.00
Landowner's % contribution	37.3%
Lessee's % contribution	62.7%

cost and returns. However, since there are no returns for summer fallow, an interest cost for the previous year's summer fallow cost is added to the cost of producing winter wheat. The SFCost spreadsheet, shown in Table 7, is used to obtain a reasonable estimate of the summer fallow interest expense to be added to the cost of producing wheat under a share lease arrangement. In the SFCost spreadsheet, the percent of the total machinery expenses, building expenses, and real estate taxes on the ShareLease spreadsheet to be assigned to summer fallow needs to be specified. The summer fallow operating expenses calculated in the ShareLease spreadsheet are incorporated into the SFCost spreadsheet and the interest rate to be used is specified. The resulting figure is a reasonable approximation of the summer fallow interest cost to be added to the wheat expenses and of its allocation between the landowner and the lessee.

TABLE 7. Estimating Summer Fallow Interest Cost for Example 3.

SFCOST: Estimates Total Summer Fallow Cost and Total Summer Fallow Interest Cost to be Added to Winter Wheat Cost in a Summer Fallow - Winter Wheat Rotation.

In the ShareLease Worksheet Summer Fallow Costs Represent:

Percent of Total Machinery Expenses:	49.00%
Percent of Total Building Expenses:	50.00%
Percent of Real Estate Taxes:	50.00%

Estimated Total Summer Fallow Costs:

	Total Expenses	Landowner Share	Lessee Share
Summer Fallow Machinery Expenses	12,056.45	0.00	12,056.45
Summer Fallow Building Expenses	0.00	0.00	0.00
Summer Fallow Real Estate Taxes:	1,500.00	1,500.00	0.00
Summer Fallow Operation Expenses:	14,101.00	2,860.00	11,241.00
Total Summer Fallow Costs:	27,657.45	4,360.00	23,297.45
Percent Interest Rate:	9.00%		
Total Summer Fallow Interest Cost:	2,489.17	392.40	2,096.77
(Add to Winter Wheat Cost in a SF - WW Rotation.)			

ANALYZING A CASH LEASE

In the event of a cash lease, the lease can be analyzed for equitability from both the landowner's and the lessee's point of view using the following two approaches.

Landowner's Cost Approach - Example 1

This approach is based on the premise that the landowner will want sufficient rent to cover the costs of owning the property. The major hurdle to overcome with this method is determining the appropriate return on the landowner's land investment. This requires specifying the value of the land and the rate of return used to calculate the dollar value of the landowner's

desired return. In Example 1, the landowner owns 200 acres of land valued at $1,200 per acre with a land tax of six dollars per acre. As shown on the LandownerCash spreadsheet in Table 8, if the landowner desires a 5% return on the value of the land (excluding any land appreciation values) and also wants to cover the land taxes, a rent of $66 per acre is required.

TABLE 8. Analyzing Cash Rent Required by Landowner – Example 1.

LANDOWNERCASH: Analyzes a Landowner's Cash Lease.

Number of Acres:	200.00
Value per Acre:	$1,200.00

Fixed Investment Expenses:	Total Value	Interest Rate	Estimated Annual Cost
	$	%	$
1. Land Value (Acres x Value per Acre):	240,000.00	5.00	12,000.00
2. Value of buildings, fences, etc.:			
3. Value of equipment used on rental land:			
4			
5			
6. Total Fixed Investment Expenses:			12,000.00
Fixed Operating Expenses:			
7. Landowner labor:			
8. Depreciation:			
a. Buildings, fences, etc.:			
b. Equipment (on value used on rental land):			
c.			
d.			
9. Repairs:			
a. Buildings, fences, etc.:			
b. Equipment:			
c.			
d.			
10. Property taxes:			1,200.00
11. Insurance:			
12			
13			
14. Total Fixed Operating Expenses:			1,200.00
Total Costs:			
1. Entire Tract:			13,200.00
2. Per Acre:			66.00

Lessee's Residual Income Approach - Example 1

The lessee, on the other hand, is concerned about the money available to pay rent after all non-land expenses have been covered. Thus, in using a residual income approach, the lessee will want to estimate operating and machinery expenses on the rental land, along with a desired return of $16 per acre for operator labor and 5% of gross returns for management. These costs are then subtracted from crop receipts to determine the amount of money available for making lease payments. As shown in the LesseeCash spreadsheet in Table 9, under the given assumptions, the most the lessee will be willing to pay for rent would be $61.84 per acre.

TABLE 9. Analyzing Cash Rent Lessee Can Afford to Pay – Example 1.

LESSEECASH: Analyzes a Lessee's Cash Lease.

	Crop	Crop	Crop	Crop	Total Revenue & Expenses
	Wheat				
	Acres	Acres	Acres	Acres	Acres
	200.0				200.00
Estimated Gross Receipts from Rental Property					
Yield per Acre:	70.00				
Total Production:	14,000.00				
$ Price/Unit:	3.75				
$ Gross Receipts:	52,500.00	0.00	0.00	0.00	52,500.00
Estimating Operating Expenses on Rental Land (Excluding machinery repair and maintenance.)					
Hired Labor:	1,545.00				1,545.00
Operator Labor:	2,400.00				2,400.00
Fertilizer:	5,283.00				5,283.00
Seed:	2,350.00				2,350.00
Fuel and Lubricants:	1,402.00				1,402.00
Herbicides & Pesticides:	6,554.00				6,554.00
Crop Insurance:	1,188.00				1,188.00
Machine Work:	3,330.00				3,330.00
Custom Aerial:					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
Overhead:	1,110.35				1,110.35
Interest on Operating Capital:	1,110.03				1,110.03
Total Operating Cost per Crop:	26,272.38	0.00	0.00	0.00	26,272.38
Per Acre Operating Cost per Crop:	131.36				131.36

TABLE 9. (continued) Analyzing Cash Rent Lessee Can Afford to Pay – Example 1.

Estimated Machinery Expenses on Rental Land

Value of Machine Complement Used on Rental Property:	33,600.00
Desired Percent Return on Machine Value:	9.00%
Machinery Investment Expense:	3,024.00
Annual Machine Replacement Cost Assigned to the Rental Property:	3,360.00
Machinery Repair and Maintenance Cost Assigned to the Rental Property:	3,500.00
Machinery Insurance, Taxes, and Housing Cost Assigned to Rental Property:	1,350.00
Total Machine Expenses on Rental Land:	11,234.00
Value of Lessee Management:	2,625.00
Total Machine, Management, and Other Expenses:	13,859.00
Total Expenses on Rental Land:	40,131.38
Residual Income Available for Rent:	
Entire Tract:	12,368.62
Per Acre:	61.84

For Example 1, if the landowner is willing to decrease return to land investment to 4.75% and the lessee is willing to decrease returns to management from 5% of gross receipts to 4.55%, a rent of $63 per acre is likely to be satisfactory to both parties.

Landowner's Cost Approach - Example 2

The addition of another crop adds nothing different to the landowner's cost approach. As shown on the LandownerCash spreadsheet in Table 10, if the landowner desires a 5% return on the value of the land (excluding any land appreciation values) and also wants to cover the land taxes, a rent of $66.00 per acre is required.

TABLE 10. Analyzing Cash Rent Required by Landowner – Example 2.

LANDOWNERCASH: Analyzes a Landowner's Cash Lease.

Number of Acres:	200.00
Value per Acre:	$1,200.00

Fixed Investment Expenses:	Total Value	Interest Rate	Estimated Annual Cost
	$	%	$
1. Land Value (Acres x Value per Acre):	240,000.00	5.00	12,000.00
2. Value of buildings, fences, etc.:			
3. Value of equipment used on rental land:			
4			
5			
6. Total Fixed Investment Expenses:			12,000.00
Fixed Operating Expenses:			
7. Landowner labor:			
8. Depreciation:			
a. Buildings, fences, etc.:			
b. Equipment (on value used on rental land):			
c.			
d.			
9. Repairs:			
a. Buildings, fences, etc.:			
b. Equipment:			
c.			
d.			
10. Property taxes:			1,200.00
11. Insurance:			
12			
13			
14. Total Fixed Operating Expenses:			1,200.00
Total Costs:			
1. Entire Tract:			13,200.00
2. Per Acre:			66.00

Lessee's Residual Income Approach - Example 2

As shown on the LesseeCash spreadsheet in Table 11, adding an additional crop is the same as adding the first crop, except that we are now dealing with 100 acres each for wheat and lentils, and the machine expense and value of lessee management are for both crops over the 200 acres. The analysis for the cash rent, Example 2, comes up with a solution that the lessee can pay up to $64.31 per acre and cover all costs, including desired return on management. Thus, a rent of $65 per acre would likely be satisfactory to both parties.

TABLE 11. Analyzing Cash Rent Lessee Can Afford to Pay – Example 2.

LESSEECASH: Analyzes a Lessee's Cash Lease.

	Crop	Crop	Crop	Crop	Total Revenue & Expenses
	Wheat	Lentils			
	Acres	Acres	Acres	Acres	Acres
	100.0	100.0			200.00
Estimated Gross Receipts from Rental Property					
Yield per Acre:	75.00	15.00			
Total Production:	7,500.00	1,500.00			
$ Price/Unit:	3.75	18.50			
$ Gross Receipts:	28,125.00	27,750.00	0.00	0.00	55,875.00
Estimating Operating Expenses on Rental Land (Excluding machinery repair and maintenance.)					
Hired Labor:	772.50	963.00			1,735.50
Operator Labor:	1,200.00	963.00			2,163.00
Fertilizer:	2,641.50				2,641.50
Seed:	1,175.00	350.00			1,525.00
Fuel and Lubricants:	701.00	1,672.00			2,373.00
Herbicides & Pesticides:	3,277.00	4,418.00			7,695.00
Crop Insurance:	594.00	750.00			1,344.00
Machine Work:	1,665.00				1,665.00
Custom Aerial:		500.00			500.00
Drill Rental:		750.00			750.00
Custom Swath:		1,500.00			1,500.00
Sprayer Rental:		350.00			350.00
					0.00
					0.00
Overhead:	555.18	686.00			1,241.18
Interest on Operating Capital:	555.01	392.00			947.01
Total Operating Cost per Crop:	13,136.19	13,294.00	0.00	0.00	26,430.19
Per Acre Operating Cost per Crop:	131.36	132.94			132.15

Estimated Machinery Expenses on Rental Land

Value of Machine Complement Used on Rental Property:	42,000.00
Desired Percent Return on Machine Value:	9.00%
Machinery Investment Expense:	3,780.00
Annual Machine Replacement Cost Assigned to the Rental Property:	4,200.00
Machinery Repair and Maintenance Cost Assigned to the Rental Property:	4,140.00
Machinery Insurance, Taxes, and Housing Cost Assigned to Rental Property:	1,670.00
Total Machine Expenses on Rental Land:	13,790.00
Value of Lessee Management:	2,793.75
Total Machine, Management, and Other Expenses:	16,583.75
Total Expenses on Rental Land	43,013.94
Residual Income Available for Rent:	
Entire Tract:	12,861.06
Per Acre:	64.31

Landowner's Cost Approach - Example 3

The procedure for determining the cash rent for the situation in Example 3 is essentially the same as that used for the situation in Example 2 in that we are dealing with essentially two crops - summer fallow and winter wheat. In example 3, the landowner owns 800 acres of land valued at $650 per acre for agricultural purposes with a land tax of $3.75 per acre - 400 acres in summer fallow, 400 acres in winter wheat. As shown on the LandownerCash spreadsheet in Table 12, if the landowner desires a 4.5% return on the value of the land (excluding any land appreciation values) and also wants to cover the land taxes, a rent of $33 per acre will be required.

Lessee's Residual Income Approach - Example 3

In this situation, the lessee is essentially dealing with two crops, summer fallow and winter wheat. However, the summer fallow costs are not paid for until the end of the second year. Thus, as shown on the LesseeCash spreadsheet in Table 13, using a residual income approach, the lessee estimates operating and machinery expenses along with a desired return of $16 per hour for operator labor and 5% of gross receipts for management on 400 acres of summer fallow and 400 acres of winter wheat. In the winter budget, a one-year interest charge is made against the summer fallow expenses since it takes a full year, or more, after these expenses occur before the crop that is to pay for these expenses is produced. This interest expense is calculated by adding the total operating cost for the summer fallow to the estimated machine costs allocated to summer fallow expenses. In this example, it was assumed that 49% of all machine expenses are summer fallow expenses. It is also assumed that 9% interest is charged against these expenses, thus, coming up with a summer fallow interest expense of $2,354.[3] Subtracting these costs from the crop receipts determines the amount of money the lessee has available for making rent payments. As shown on the LesseeCash spreadsheet in Table 13, under the given assumptions, the most the lessee will be willing to pay for rent would be $28.67 per acre.

In this situation, some negotiation will need to take place to reach an agreeable cash rental price. If, for example, the landowner is willing drop the required return on the value of land investment to 4% and the lessee willing to drop the return to management to 4% of gross receipts, a resulting cash rental price of approximately $30 per acre could most likely be agreed upon.

[3] [$14,101 + (24,605.00 x .49)]x .09 = $2354.19

TABLE 12. Analyzing Cash Rent Required by Landowner – Example 3.

LANDOWNERCASH: Analyzes a Landowner's Cash Lease.

Number of Acres:	800.00
Value per Acre:	$650.00

Fixed Investment Expenses:	Total Value	Interest Rate	Estimated Annual Cost
	$	%	$
1. Land Value (Acres x Value per Acre):	520,000.00	4.50	23,400.00
2. Value of buildings, fences, etc.:			
3. Value of equipment used on rental land:			
4			
5			
6. Total Fixed Investment Expenses:			23,400.00
Fixed Operating Expenses:			
7. Landowner labor:			
8. Depreciation:			
a. Buildings, fences, etc.:			
b. Equipment (on value used on rental land):			
c.			
d.			
9. Repairs:			
a. Buildings, fences, etc.:			
b. Equipment:			
c.			
d.			
10. Property taxes:			3,000.00
11. Insurance:			
12			
13			
14. Total Fixed Operating Expenses:			3,000.00
Total Costs:			
1. Entire Tract:			26,400.00
2. Per Acre:			33.00

TABLE 13. Analyzing Cash Rent Lessee Can Afford to Pay – Example 3.

LESSEECASH: Analyzes a Lessee's Cash Lease.

	Crop	Crop	Crop	Crop	Total Revenue & Expenses
	SumFal	Wheat			
	Acres	Acres	Acres	Acres	Acres
	400.0	400.0			800.00
Estimated Gross Receipts from Rental Property					
Yield per Acre:		55.00			
Total Production:	0.00	22,000.00			
$ Price/Unit:		3.75			
$ Gross Receipts:	0.00	82,500.00	0.00	0.00	82,500.00
Estimating Operating Expenses on Rental Land (Excluding machinery repair and maintenance.)					
Hired Labor:	1,770.00	1,186.00			2,956.00
Operator Labor:	1,770.00	1,186.00			2,956.00
Fertilizer:	7,536.00	1,040.00			8,576.00
Seed:		3,744.00			3,744.00
Fuel and Lubricants:	1,645.00	704.00			2,349.00
Herbicides & Pesticides:		960.00			960.00
Crop Insurance:		676.00			676.00
Machine Work:		1,872.00			1,872.00
Custom Aerial:		1,320.00			1,320.00
Perrennial Weed Control:	160.00	160.00			320.00
Interest on Summer Fallow Cost:		2,354.00			2,354.00
					0.00
					0.00
					0.00
Overhead:	736.00	740.00			1,476.00
Interest on Operating Capital:	484.00	670.00			1,154.00
Total Operating Cost per Crop:	14,101.00	16,612.00	0.00	0.00	30,713.00
Per Acre Operating Cost per Crop:	35.25	41.53			38.39

Estimated Machinery Expenses on Rental Land

Value of Machine Complement Used on Rental Property:	82,000.00
Desired Percent Return on Machine Value:	9.00%
Machinery Investment Expense:	7,380.00
Annual Machine Replacement Cost Assigned to the Rental Property:	8,200.00
Machinery Repair and Maintenance Cost Assigned to the Rental Property:	7,100.00
Machinery Insurance, Taxes, and Housing Cost Assigned to Rental Property:	1,925.00
Total Machine Expenses on Rental Land:	24,605.00
Value of Lessee Management:	4,250.00
Total Machine, Management, and Other Expenses:	28,855.00
Total Expenses on Rental Land:	59,568.00
Residual Income Available for Rent:	
Entire Tract:	22,932.00
Per Acre:	28.67

FLEXIBLE CASH RENTS

In all the cash lease analyses above it was assumed that the price and yield assumptions were correct. Fluctuation in crop prices and crop yields has stimulated interest in varying or flexing the cash rent. The lessee is concerned that a drop in prices and/or yields will make it difficult to meet a fixed rent payment. For instance, in determining the ability of the lessee to pay a cash rent under Example 1 assumptions (Table 9), it was determined that if the lessee were to receive $3.75 a bushel for wheat yielding 75 bushels per acre, he/she could afford to pay approximately $62 per acre in cash rent. However, if the price remained at $3.75 but average yield dropped to 70 bushels per acre, the lessee could afford to pay only $43 per acre and maintain desired returns to operator labor, management, and invested capital. Similarly, landowners are likely to think it is unfair for the lessee to gain full benefit from an unexpected sharp increase in prices.

There are several methods of varying cash rents, however, the most common involve: (1) flexing according to commodity price changes only, and (2) flexing with variation in both commodity price and yield. Three common variations of the price only approach are outlined below.

1. Base Rent Multiplied by Ratio of Current Year's Price to Base Price.

   With this approach, it is necessary for the landowner and lessee to agree at the beginning of the lease period on a base rent and a base price. They might, for example, agree that the base rent will be $60 per acre and the base price for wheat is $3.75 per bushel. Accordingly, if the "current year's price" (for example, the average daily closing price at elevator "X" during the period August 1 to October1) is $4.00 per bushel, the calculation for the adjusted rent is:

   $60 (base rent) x [$4.00 (current year's price) / $3.75 (base price)] = $64

2. Base Rent with Adjustments for Prices Outside a Predetermined Range.

   This method requires that the landowner and lessee agree on a base rent that applies as long as the current year's price stays within a predetermined range. For example, the base rent might be $60 per acre, provided wheat prices fall within a $3.50 - $4.00 range. However, the rent would increase or decrease by $5 per acre for each 25¢ per bushel variation in wheat prices outside of the price range. Thus, if the current year's price turned out to be $4.25, the adjusted cash rent would be $60 + $5, or $65. A decrease in the current year's price to $3.25 would result in a cash rent of $60 - $5, or $55.

3. Rent Based on Value of Fixed Volume of Crop.

   If this approach is used, the landowner and lessee agree that the rent will be equivalent to a fixed quantity of production multiplied by the current market price. An example agreement would be that the cash rent will be equal to the value of 16 bushels of wheat based on the average daily closing price at elevator "X" during the period August 1 to October 1. Thus, if the average price is $3.75 per bushel, the rent is 16 bushels x $3.75 = $60 per acre. Of course, a higher wheat price increases the rent and a lower price reduces the rent.

When variation in both price and yield can be expected and the landowner and lessee wish to share the risk associated with that variation, the cash rent can be flexed according to changes in yield and/or commodity price. To implement this approach, both parties must agree on a base rent that will apply for a given yield and price. They may, for example, agree that the rent will be $60 per acre if the wheat price is $3.75 per bushel and the yield is 70 bushels. Next, they must agree on a method of determining the actual market price and actual yield. This should be spelled out in detail and included in the lease agreement. If the actual price and yield are $3.50 and 60 bushels, respectively, the adjusted rent is calculated as follows:

$60 (base rent) x [$3.50 (actual price) / $3.75 (base price)] x

[60 bu. (actual yield)] / 70 bu. (base yield)] = $48

A WORD OF CAUTION when using a flex lease. If you are receiving government payments on the land in question, **BE SURE TO CHECK WITH YOUR LOCAL FARM SERVICE AGENCY** as to how government payments will be distributed under a flex lease **BEFORE** entering into an agreement. In addition, you need to also **CHECK WITH YOUR CROP INSURANCE AGENT** as to how indemnity payments may be affected under a flex lease agreement.

LAND LEASE ANALYZER WORKBOOK

The Land_Lease_Analyzer workbook, formatted in both Excel (*.xls) and Quattro Pro (*.wb3) contain the spreadsheets presented in this bulletin and can be downloaded from the WSU Farm Management web site. Go to http://www.farm-mgmt.wsu.edu/publication_lists.htm, click on "Land," and the workbook links will be directly below the title of this extension bulletin. To download the Land_Lease_Analyzer workbook, click on the link to either the Excel or the Quattro Pro file. When the workbook appears, save the workbook in a specified folder on your hard drive. Once the Land_Lease_Analyzer workbook is downloaded, you can go to the folder in which you stored this file on your hard drive and use it. It is recommended, however, that you make the Land_Lease_Analyzer workbook a "read-only" file by right-clicking on the Land_Lease_Analyzer workbook file name, left-clicking on "Properties," "General," "Read-only," and "OK." Making the file a "read-only" file will preserve the workbook in its original form. If you want to save new data loaded into this workbook, simply save it under another file name.

Also listed are the other workbook files used in putting this publication together, "L_L_A_Wheat, L_L_A_Wheat-Lentils, and L_L_A_SFWW. To download the three other workbooks, do the same as outlined above for the Land_Lease_Analyzer.

The Land_Lease_Analyzer workbook contains the spreadsheets for analyzing the profitability and equitability of a dryland lease from both the landowner and lessee point of view. Although this workbook was originally developed for dryland crop producers in eastern Washington, it can also be used to analyze the profitability and equitability of annual crops produced on irrigated cropland. These spreadsheets have been illustrated in Tables 1 through 13 of this bulletin. For each spreadsheet, the blue cells are protected cells and the yellow cells are unprotected cells used for data entry and notations. If additional line items are needed for the operating expense section for either the crop share or the cash lease spreadsheets, they can be easily added by unprotecting the respective spreadsheet (no password needed) and adding additional lines.

If you have problems downloading or using the Land_Lease_Analyzer file, contact Herb Hinman at hinman@wsu.edu or 509-335-2855.

WASHINGTON STATE UNIVERSITY EXTENSION

College of Agricultural, Human, and Natural Resource Sciences

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This is available online only at: http://www.farm-mgmt.wsu.edu/land.html

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