



Kansas Irrigation Leases

Department of Agricultural Economics



Kansas State University Agricultural Experiment Station and Cooperative Extension Service

Larry N. Langemeier
Extension Agricultural Economist
Farm Management Studies

Irrigation Leases

An irrigation lease is a contract by which property is conveyed for a term of years for a specified rent. This guide illustrates crop-share irrigation lease inputs and costs for center-pivot and flood-irrigation systems.

Lease Contract

The lease contract should be in writing to protect all parties in case of death, divorce, termination of the lease, etc. Written leases clarify to each party (landlord and tenant) their specific responsibilities as to furnishing resources, sharing expenses, sharing receipts, and determining how compensation is provided each party for unexhausted resources upon termination of the lease.

Fair Lease

Sharing crops and expenses varies from lease to lease. This is how it should be because the ownership of resources is not the same for each lease. The following examples will illustrate different landlord and tenant contributions toward production, the resource charge and the crop-share for each party. Shared inputs such as fertilizer, herbicides, and drying should be shared the same as the crop share.

Establishing a Crop Share Arrangement

Irrigation farming is a business involving the combination of land, irrigation equipment, machinery, labor, management, and other inputs to produce crops. In a lease arrangement, each of these inputs is owned or contributed

by different parties. Payment for the inputs should be proportional to the value contributed toward production. Equitable payment to each party is the reason for developing a fair lease. An equitable lease should be developed using some basic rules or principles. Five important principles include:

1. Variable expenses that increase yields should be shared in the same percentage as the crop is shared.
2. Share arrangements should be adjusted to reflect the effect new technology has on costs and returns.
3. Both landlord and tenant should share total returns in the same proportion as they contribute resources.
4. Tenants and landlords should be compensated at the termination of the lease for the undepreciated balance of long-term investments.
5. Communication should be maintained between landlord and tenant.

Example Lease Arrangements

Table 1 illustrates five center-pivot situations according to the irrigation components furnished by the landlord or tenant. Table 2 indicates the same information for flood irrigation systems. Change your cost for other crops or different resource costs by using the worksheet.

Additional Information

For more information on irrigation crop share lease arrangements, see NCR Publication 148 *Irrigation Crop Share and Cash Rental Arrangements for Your Farm*. Additional information on lease arrangements and lease forms can be obtained from county Extension offices.

WORKSHEET—IRRIGATION LEASE

System Type _____ Location _____

Line	Value			Rate or Life	Per Acre Charge ²	Your Farm	
	Total Acres	Per Acre ¹				Landlord	Tenant
1. Land (Undeveloped)	\$ _____	\$ _____	×	.06	\$ _____	\$ _____	\$ _____
2. Land Real Estate Tax			×	.005	\$ _____	\$ _____	\$ _____
3. Land Development	\$ _____	\$ _____	×	.06	\$ _____	\$ _____	\$ _____
4. Development Real Estate Tax			×	.005	\$ _____	\$ _____	\$ _____
5. Well (ft.)	\$ _____	\$ _____	×	.05	\$ _____	\$ _____	\$ _____
6. Well Depreciation			÷	15 yr	\$ _____	\$ _____	\$ _____
7. Pump	\$ _____	\$ _____	×	.05	\$ _____	\$ _____	\$ _____
8. Pump Depreciation			÷	15 yr	\$ _____	\$ _____	\$ _____
9. Gear Head	\$ _____	\$ _____	×	.05	\$ _____	\$ _____	\$ _____
10. Gear Head Depreciation			÷	15 yr	\$ _____	\$ _____	\$ _____
11. Power Unit/Meter	\$ _____	\$ _____	×	.05			
12. Power/Meter Depreciation			÷	7 yr	\$ _____	\$ _____	\$ _____
13. System _____	\$ _____	\$ _____	×	.05	\$ _____	\$ _____	\$ _____
14. System Depreciation			÷	10 yr	\$ _____	\$ _____	\$ _____
15. Irrigation Equipment Repairs	XXX	\$ _____	×	.01-.02	\$ _____	\$ _____	\$ _____
16. Irrigation Equipment Insurance			×	.0025	\$ _____	\$ _____	\$ _____
17. Labor	XXX	hrs.	×	\$ /hr	\$ _____	\$ _____	\$ _____
18. Crop Machinery	XXX	\$ _____	×	.05	\$ _____	\$ _____	\$ _____
19. Crop Machinery Depreciation			÷	10 yr	\$ _____	\$ _____	\$ _____
20. Machinery Repairs & Insurance			×	.09-.14	\$ _____	\$ _____	\$ _____
21. Management ³	XXX	\$ _____	×	.02	\$ _____	\$ _____	\$ _____
22. Fertilizer				XXX	\$ _____	\$ _____	\$ _____
23. Seed	Enter Only Items Not Shared ⁴				\$ _____	\$ _____	\$ _____
24. Irrigation Fuel					\$ _____	\$ _____	\$ _____
25. Crop Fuel					\$ _____	\$ _____	\$ _____
26. Herbicide					\$ _____	\$ _____	\$ _____
27. Insecticide					\$ _____	\$ _____	\$ _____
28. Crop Insurance					\$ _____	\$ _____	\$ _____
29. Harvest					\$ _____	\$ _____	\$ _____
30. Drying					\$ _____	\$ _____	\$ _____
31. Hauling					\$ _____	\$ _____	\$ _____
32. Other					\$ _____	\$ _____	\$ _____
32. Other					\$ _____	\$ _____	\$ _____
33. TOTAL ALL COSTS (Lines 1–32)							
34. Percent Crop Share = $\frac{\text{Line 33 Landlord (Tenant)}}{\text{Line 33 Per Acre Charge}}$					100%	%	%

¹ Per acre value based on number of acres irrigated, which may be 126 acres for center pivot.

² Obtain “Per Acre Charge” by multiplying, or dividing, per acre value by rate or life.

³ Management charge based on average investment in land, land development, irrigation equipment, and crop machinery.

⁴ For operating expenses (lines 22–32), enter only the value for items not shared between the landlord and tenant.

Table 1. Center Pivot Irrigation Leases (Example Corn)
Use Worksheet To Split Your Costs*

					System A indicates landlord contributes only land—Col’s B, C, D, and E indicate landlord furnishes additional items.										
					A		B		C		D		E		
					Land Only ³		Add Well		Add Pump and Gear Head		Add Power Unit		Add System		
Line	Item	VALUE ¹		RATE ²	Per Ac. Annual Charge (1)	L	T	L	T	L	T	L	T	L	T
		Total Acres	Per Acre			(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Land (Undeveloped)	75,600	600.00	.06	36.00	36.00		36.00		36.00		36.00		36.00	
2.	Land Real Estate Tax ⁴	890	4.45	.005	4.45	4.45		4.45		4.45		4.45		4.45	
3.	Land Development														
4.	Dev. Real Estate Tax ⁴														
5.	Well (300') ⁵	16,506	131.00	.05	6.55		6.55	6.55		6.55		6.55		6.55	
6.	Well Depreciation			15 yr	8.73		8.73	8.73		8.73		8.73		8.73	
7.	Pump	16,613	131.85	.05	6.59		6.59		6.59	6.59		6.59		6.59	
8.	Pump Depreciation			15 yr	8.79		8.79		8.79	8.79		8.79		8.79	
9.	Gear Head	3,421	27.15	.05	1.36		1.36		1.36	1.36		1.36		1.36	
10.	Gear Head Depreciation			15 yr	1.81		1.81		1.81	1.81		1.81		1.81	
11.	Power Unit/Meter	6,300	50.00	.05	2.50		2.50		2.50		2.50	2.50		2.50	
12.	Power Depreciation			7 yr	7.14		7.14		7.14		7.14	7.14		7.14	
13.	Irrigation System	48,510	385.00	.05	19.25		19.25		19.25		19.25		19.25	19.25	
14.	Irr. System Depreciation			10 yr	38.50		38.50		38.50		38.50		38.50	38.50	
15.	Irr. Equipment Repair		725.00	.01	7.25		7.25	1.31	5.94	2.90	4.35	3.40	3.85	7.25	
16.	Irr. Equip. Insurance			.0025	1.81		1.81	.33	1.48	.73	1.08	.85	.96	1.81	
17.	Labor		2.35	9.00	21.15		21.15		21.15		21.15		21.15		21.15
18.	Crop Machinery ⁶		236.00	.05	15.93		15.93		15.93		15.93		15.93		15.93
19.	Crop Machinery Depr. ⁶			10 yr	15.34		15.34		15.34		15.34		15.34		15.34
20.	Mach. Repairs and Ins.			.105	24.78		24.78		24.78		24.78		24.78		24.78
21.	Management ⁷		1,561.00	.02	31.22		31.22		31.22		31.22		31.22		31.22
22.	Fertilizer														
23.	Seed				36.80		36.80		36.80		36.80		36.80		36.80
24.	Irrigation Fuel														
25.	Crop Fuel				9.55		9.55		9.55		9.55		9.55		9.55
26.	Herbicide														
27.	Insecticide														
28.	Crop Insurance														
29.	Harvest ⁶														
30.	Drying														
31.	Hauling														
32.	Other_____				13.50		13.50		13.50		13.50		13.50		13.50
33.	TOTAL ALL COSTS				319.00	40.45	278.55	57.37	261.63	77.91	241.09	88.17	230.83	150.73	168.27
34.	Percent Crop Share					13	87	18	82	24	76	28	72	47	53

* Information obtained from MF-836, "Irrigation Capital Requirements and Energy Costs," and MF-585, "Center Pivot Irrigated Corn Cost-Return Budget." For other crops, change labor and variable cost values.

¹ Total and per acre values based on 126 acre center pivot. These values assume that the other 34 acres will have dryland crop production, and thus be produced under a dryland crop lease. If not, land and real estate tax should be based on 160 acres with values of \$96,000 and \$712 respectively. The landlord costs for land and real estate tax would then be changed to \$45.71 and \$5.65 respectively.

² Interest charge of 5 percent against the average investment cost spread over its useful life for the well, pump, gear head, power unit, pivot, and crop machinery. Interest charge of 6 percent against investment in land and land development.

³ Lease arrangement feasible only for a tenant with long-term written lease.

⁴ Real estate tax computed on the value of land, land development, well, pump, and gear head. In above example, landlord is assumed to pay all real estate taxes.

⁵ Well depths vary from 100 to 600 feet, which will affect costs.

⁶ Crop machinery investment includes harvesting equipment. If harvesting is custom hired, include value under the tenant if cost not shared. Crop machinery depreciation assumes 35 percent salvage value.

⁷ Total investment in land, land development, irrigation equipment, and crop machinery.

Table 2. Flood Irrigation Leases (Example Corn)

Use Worksheet To Split Your Costs*

					System A indicates landlord contributes only land—Col’s B, C, D, and E indicate landlord furnishes additional items.										
					A		B		C		D		E		
Line	Item	VALUE ¹		RATE ²	Per Ac. Annual Charge (1)	Land Only ³		Add Well		Add Pump and Gear Head		Add Power Unit		Add System	
		Total Acres	Per Acre			L (2)	T (3)	L (4)	T (5)	L (6)	T (7)	L (8)	T (9)	L (10)	T (11)
1.	Land (Undeveloped)	\$85,600	\$535.00	.06	\$32.10	\$32.10		\$32.10		\$32.10		\$32.10		\$32.10	
2.	Land Real Estate Tax ⁴	763	3.82	.005	3.82	3.82		3.82		3.82		3.82		3.82	
3.	Land Development	22,400	140.00	.06	8.40	8.40		8.40		8.40		8.40		8.40	
4.	Dev. Real Estate Tax ⁴	140.00	.70	.01	.70	.70		.70		.70		.70		.70	
5.	Well (300') ⁵	16,480	103.00	.05	5.15		5.15	5.15		5.15		5.15		5.15	
6.	Well Depreciation			15 yr	6.87		6.87	6.87		6.87		6.87		6.87	
7.	Pump	16,608	103.80	.05	5.19		5.19		5.19	5.19		5.19		5.19	
8.	Pump Depreciation			15 yr	6.92		6.92		6.92	6.92		6.92		6.92	
9.	Gear Head	3,392	21.20	.05	1.06		1.06		1.06	1.06		1.06		1.06	
10.	Gear Head Depreciation			15 yr	1.41		1.41		1.41	1.41		1.41		1.41	
11.	Power Unit/Meter	6,240	39.00	.05	1.95		1.95		1.95		1.95	1.95		1.95	
12.	Power Depreciation			7 yr	5.57		5.57		5.57		5.57	5.57		5.57	
13.	Irrigation System	5,280	33.00	.05	1.65		1.65		1.65		1.65		1.65	1.65	
14.	Irr. System Depreciation			10 yr	3.30		3.30		3.30		3.30		3.30	3.30	
15.	Irr. Equipment Repair		300.00	.014	4.20		4.20	1.44	2.76	3.19	1.01	3.74	.46	4.20	
16.	Irr. Equip. Insurance			.0025	.75		.75	.26	.49	.57	.18	.67	.08	.75	
17.	Labor		3.05 hrs	9.00	27.45		27.45		27.45		27.45		27.45		27.45
18.	Crop Machinery ⁶		239.00	.05	16.13		16.13		16.13		16.13		16.13		16.13
19.	Crop Machinery Depr. ⁶			10 yr	15.54		15.54		15.54		15.54		15.54		15.54
20.	Mach. Repairs and Ins.			.123	29.40		29.40		29.40		29.40		29.40		29.40
21.	Management ⁷		1,214.00	.02	24.28		24.28		24.28		24.28		24.28		24.28
22.	Fertilizer														
23.	Seed				36.80		36.80		36.80		36.80		36.80		36.80
24.	Irrigation Fuel														
25.	Crop Fuel				10.37		10.37		10.37		10.37		10.37		10.37
26.	Herbicide														
27.	Insecticide														
28.	Crop Insurance														
29.	Harvest ⁶														
30.	Drying														
31.	Hauling														
32.	Other_____				13.50		13.50		13.50		13.50		13.50		13.50
33.	TOTAL ALL COSTS				\$262.51	45.02	217.49	58.74	203.77	75.38	187.13	83.55	178.96	89.04	173.47
34.	Percent Crop Share					17	83	22	78	29	71	32	68	34	66

* Information obtained from MF-836, "Irrigation Capital Requirements and Energy Costs," and MF-578, "Flood Irrigated Corn Cost-Return Budget." For other crops, change labor and variable cost values.

¹ Total and per acre values based on 160 acres flood irrigation.

² Interest charge of 5 percent against the average investment cost spread over its useful life for the well, pump, gear head, power unit, system, and crop machinery. Interest charge of 6 percent against investment in land and land development.

³ Lease arrangement feasible only for a tenant with long-term written lease.

⁴ Real estate tax computed on the value of land, land development, well, pump, and gear head. In above example, landlord is assumed to pay all real estate taxes.

⁵ Well depths vary from 100 to 600 feet, which will affect costs.

⁶ Crop machinery investment includes harvesting equipment. If harvesting is custom hired, include value under the tenant if cost not shared. Crop machinery depreciation assumes 35 percent salvage value.

⁷ Total investment in land, land development, irrigation equipment, and crop machinery.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan, Kansas

MF-284Revised

October 1997

Issued in furtherance of Cooperative Extension Work, acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, Richard D. Wootton, Associate Director. All educational programs and materials available without discrimination on the basis of race, color, national origin, sex, age, or disability.

File Code: Farm Management 9-3

10-97—1.5M