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Land is a Big Part of Production Cost – Make it Equitable

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The cost of raising potatoes has increased dramatically in recent years. Based on University of Idaho enterprise budgets, total per acre cost to raise potatoes increased 60 to 65 percent from 2003 to 2008, and between 20 and 25 percent in 2008 alone. While land costs didn't match the overall increase in 2008, which was pushed mostly by fuel and fertilizer cost increases, land charges were still up by 14 to 17 percent in UI potato budgets in 2008. And from 2003 to 2008, land costs used in UI potato budgets have gone up 44 to 70 percent.

What value should you assign to land? If you rent the ground, the appropriate value is obvious. If you are buying land, the payment to the bank, plus property taxes and water assessment are your out-of-pocket costs. If the land is paid for, should you value the land based only on your cash expenses—property tax and water assessment? From a cash flow standpoint that may make sense. But from an economic perspective, the land value is being understated. In the UI crop budgets we use an opportunity cost to value the land based on a one year cash lease specific to that crop. Basically, this is what you could earn if you didn't farm the ground and instead leased it to your neighbor.

Another way of looking at the opportunity cost is to consider the rate of return on the money you could get if you sold the land. Rather than use the paltry current interest rate on pass book savings or money markets, I would recommend using the historic interest rate charged by Farm Credit Services on real estate loans.

If you lease ground, how do you determine a lease that is fair and equitable—terms that are often associated with leases? If you look in Webster's dictionary, you will see that they have similar meanings. However, equitable better describes what a lease should be—value for value. A lease allows a tenant farmer to secure a needed resource (land) while providing a landowner with a return to an investment. A lease should provide security for both parties and encourage using the land in a profitable way while maintaining productivity. The guiding principle of an equitable lease is that income is shared in proportion to costs contributed by each party—thus, the "cost-contributions approach."

Leases can be oral or written, although written is recommended. At a minimum, a written lease should be signed by both parties, list the beginning and ending dates, provide a legal description of the property and specify amount, type and time of payment. Contingencies for default or nonperformance also should be addressed, and parameters in flexible leases should be identified.

Based on method of payment, leases are classified as either crop-share or cash. The shares in a crop-share lease will typically vary by crop but often follow a traditional landowner/tenant split of the crop and certain expenses. While less common than cash rents, crop-share leases (Table 1) on potatoes traditionally have had a ¼:¾ split for landlord and tenant, although others are used. Seed, fertilizer and chemical expenses are traditionally shared with the landowner, and in some cases, power costs. The landlord's share might drop to 1/5 if they don't share in the input costs. While traditional crop-share splits may still be valid, technological and structural changes may mean they are no longer appropriate.

Cash leases (Table 2) can be either fixed or flexible. With a cash lease, the landowner consigns the management and use of the land, and possibly other property, to the tenant for a cash payment. Unless written for a specific time period, cash leases automatically renew unless one of the parties initiates a timely notification of termination. Cash leases can be for a single year and one crop, or multiple years with or without a specified crop rotation. Leases cover a crop year, not a calendar year. Payment can be made as a lump sum or divided with one payment in winter to ear-

Table 1. Crop-share lease advantages and disadvantages.

Advantages	Disadvantages
Reduces tenant's operating costs.	Variable income to the landowner.
Yield and price risk are shared.	Added record keeping.
Landowner's material participation is easier to prove.	Landowner involved in marketing.
Benefit of shared management.	Requires more communication.
Both parties benefit from adopting new technology, maintaining the land's productivity and using the land efficiently.	More difficult to develop than a cash lease

Table 2. Fixed-cash lease advantages and disadvantages.

Advantages	Disadvantages
Easy to develop and utilize.	Tenant has all price and production risk.
No production management decisions for landowner.	Landowner has no incentive to make improvements or investments.
Maximum flexibility for tenant.	Appropriate cash lease may be difficult to determine.
Fixed income for landowner.	
Fewer opportunities for miscommunication	

ly spring and a second after harvest. Tradition and demand for leased land are two major factors in determining the cost of cash leases.

To use the cost-contributions approach in developing a lease, the landowner and tenant need to agree on whom will pay which expenses involved in raising the crop(s). To help with this process, University of Idaho has a spreadsheet available at http://www.cals.uidaho.edu/aers/r_crops.htm. At the bottom of the page you'll see "Idaho Crop Lease Calculator." The published University of Idaho cost of production estimates found at this same web site can also serve as a useful guide in identifying all relevant costs.

Cost-contribution leases can be developed for a single crop or for multiple crops in a rotation. The split on expenses determines the appropriate crop-share lease, which can then be converted to a cash lease. The landowner and tenant must agree on an expected price and yield to use in calculating "expected revenue," which is the basis of the cash lease. Having historical field- or farm-specific yield data will facilitate this process. Multiplying the expected revenue by the percentage of expenses paid by the landowner gives the landlord's share of expected revenue. But since the landowner no longer shares in the production or price risk, the landlord's expected revenue should be reduced to reflect the landowner's reduced risk since the rent payment is not influenced by the yield or price variability. The percentage reduction should reflect the underlying variability in the crops price and yield. For example, a 5 to 10 percent reduction may be appropriate for wheat, but a 10 to 20 percent reduction may be more appropriate for potatoes.

Although the tenant has all the yield and price risk under a cash lease, the landowner is not entirely free of risk since the tenant may default. If the landowner receives all or a significant portion of the lease payment before the growing season, the percentage reduction might be larger than if payment is received after harvest. Risk premium adjustments can vary widely from 5 to 30 percent. A more volatile commodity price and a more variable yield justify a greater risk premium.

A fixed cash lease, regardless of how it is calculated, can be converted to a flexible-cash lease to spread price and yield risk between the landowner and tenant without using a crop-share lease. A flex payment is added to the cash rent. The flex can be based on price, yield or both. The flex payment can be dollar-based or a percentage. While space doesn't allow us to discuss all the possibilities, a yield-base percentage flex example will illustrate the concept.

Assume the risk premium adjusted cash rent on potato land is $493/acre based on a paid yield of 400 cwt, an expected price of $7.00, a cost contribution from the landlord of 22% and a 20% risk premium adjustment. If the actual yield hit 450 cwt/acre paid yield, a yield-based flex would pay an additional $62/acre ($493 x 450/400). The base cash rent would not be reduced, however, if the actual yield fell below the base yield. While the flex could go both directions, an upward flex payment to the landlord is most common. A price-based flex could be made in a similar fashion. A fixed-dollar-based flex could also be set up, which would simply add a fixed dollar amount, say, $1.00, to the base rent for each hundredweight above the base yield. A yield of 450 with an expected yield of 400 would mean an extra $50 per acre to the landlord.

The advantage of flex-based cash rent becomes obvious considering what happened to cash leases after the extremely high grain prices in 2007-08. Landlords demanded and often received significant increases that they felt were owed them because of the $8-10 wheat prices. Unfortunately, tenants are now trying to pay the higher rent with lower priced wheat. A price-based flex lease would have benefitted the landlord when the price went up and would have protected the tenant when the price of wheat went down. Isn't that equitable?

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Did You Know?
According to USDA, the average value of irrigated land in Idaho declined by 11% from 2008 to 2009, but cash leases on irrigated land increased by 21%.

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