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79-1476

Chapter 79—TAXATION

Article 14—PROPERTY VALUATION, EQUALIZING ASSESSMENTS,
APPRAISERS AND ASSESSMENT OF PROPERTY

79-1476. Statewide reappraisal of real property; duties and authorities of state director of property valuation and county and district appraisers; methods of establishing valuations; time of application of valuations. The director of property valuation is hereby directed and empowered to administer and supervise a statewide program of reappraisal of all real property located within the state. Except as otherwise authorized by K.S.A. 19-428, and amendments thereto, each county shall comprise a separate appraisal district under such program, and the county appraiser shall have the duty of reappraising all of the real property in the county pursuant to guidelines and timetables prescribed by the director of property valuation and of updating the same on an annual basis. In the case of multi-county appraisal districts, the district appraiser shall have the duty of reappraising all of the real property in each of the counties comprising the district pursuant to such guidelines and timetables and of updating the same on an annual basis. Commencing in 2000, every parcel of real property shall be actually viewed and inspected by the county or district appraiser once every six years. Any county or district appraiser shall be deemed to be in compliance with the foregoing requirement in any year if 17% or more of the parcels in such county or district are actually viewed and inspected. Compilation of data for the initial preparation or updating of inventories for each parcel of real property and entry thereof into the state computer system as provided for in K.S.A. 79-1477, and amendments thereto, shall be completed not later than January 1, 1989. Whenever the director determines that reappraisal of all real property within a county is complete, notification thereof shall be given to the governor and to the state board of tax appeals. Valuations shall be established for each parcel of real property at its fair market value in money in accordance with the provisions of K.S.A. 79-503a, and amendments thereto. In addition thereto valuations shall be established for each parcel of land devoted to agricultural use upon the basis of the agricultural income or productivity attributable to the inherent capabilities of such land in its current usage under a degree of management reflecting median production levels in the manner hereinafter provided. A classification system for all land devoted to agricultural use shall be adopted by the director of property valuation using criteria established by the United States department of agriculture soil conservation service. For all taxable years commencing after December 31, 1989, all land devoted to agricultural use which is subject to the federal conservation reserve program shall be classified as cultivated dry land for the purpose of valuation for property tax purposes pursuant to this section. Productivity of land devoted to agricultural use shall be determined for all land classes within each county or homogeneous region based on an average of the eight calendar years immediately preceding the calendar year which

immediately precedes the year of valuation, at a degree of management reflecting median production levels. The director of property valuation shall determine median production levels based on information available from state and federal crop and livestock reporting services, the soil conservation service, and any other sources of data that the director considers appropriate. The share of net income from land in the various land classes within each county or homogeneous region which is normally received by the landlord shall be used as the basis for determining agricultural income for all land devoted to agricultural use except pasture or rangeland. The net income normally received by the landlord from such land shall be determined by deducting expenses normally incurred by the landlord from the share of the gross income normally received by the landlord. The net rental income normally received by the landlord from pasture or rangeland within each county or homogeneous region shall be used as the basis for determining agricultural income from such land. The net rental income from pasture and rangeland which is normally received by the landlord shall be determined by deducting expenses normally incurred from the gross income normally received by the landlord. Commodity prices, crop yields and pasture and rangeland rental rates and expenses shall be based on an average of the eight calendar years immediately preceding the calendar year which immediately precedes the year of valuation. Net income for every land class within each county or homogeneous region shall be capitalized at a rate determined to be the sum of the contract rate of interest on new federal land bank loans in Kansas on July 1 of each year averaged over a five-year period which includes the five years immediately preceding the calendar year which immediately precedes the year of valuation, plus a percentage not less than .75% nor more than 2.75%, as determined by the director of property valuation.

Based on the foregoing procedures the director of property valuation shall make an annual determination of the value of land within each of the various classes of land devoted to agricultural use within each county or homogeneous region and furnish the same to the several county appraisers who shall classify such land according to its current usage and apply the value applicable to such class of land according to the valuation schedules prepared and adopted by the director of property valuation under the provisions of this section. It is the intent of the legislature that appraisal judgment and appraisal standards be followed and incorporated throughout the process of data collection and analysis and establishment of values pursuant to this section.

For the purpose of the foregoing provisions of this section the phrase "land devoted to agricultural use" shall mean and include land, regardless of whether it is located in the unincorporated area of the county or within the corporate limits of a city, which is devoted to the production of plants, animals or horticultural products, including but not limited to: Forages; grains and feed crops; dairy animals and dairy products; poultry and poultry products; beef cattle, sheep, swine and horses; bees and apiary products; trees and forest products; fruits, nuts and berries; vegetables; nursery, floral, ornamental and greenhouse products. Land devoted to agricultural use shall not include those lands which are used for recreational purposes, other than that land established as a controlled shooting area pursuant to K.S.A. 32-943, and amendments thereto, which shall be deemed to be land devoted to agricultural use, suburban residential acreages, rural home

sites or farm home sites and yard plots whose primary function is for residential or recreational purposes even though such properties may produce or maintain some of those plants or animals listed in the foregoing definition. The term "expenses" shall mean those expenses typically incurred in producing the plants, animals and horticultural products described above including management fees, production costs, maintenance and depreciation of fences, irrigation wells, irrigation laterals and real estate taxes, but the term shall not include those expenses incurred in providing temporary or permanent buildings used in the production of such plants, animals and horticultural products. The provisions of this act shall not be construed to conflict with any other provisions of law relating to the appraisal of tangible property for taxation purposes including the equalization processes of the county and state board of tax appeals.

History: L. 1985, ch. 314, § 1; L. 1987, ch. 378, § 1; L. 1988, ch. 377, § 14; L. 1990, ch. 347, § 1; L. 1994, ch. 275, § 2; L. 1995, ch. 254, § 6; L. 1997, ch. 126, § 40; L. 1997, ch. 187, § 4; L. 1999, ch. 123, § 5; July 1.

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Brief Explanation of the Statute and Overview

Property tax is an ad valorem tax, or a tax based upon value of the property, not on the ability of a property owner to pay, but rather a wealth tax. There are two commonly used valuation standards in ad valorem tax systems—market value and use value. Appraisers commonly use market value, whether determining a value for a mortgage, estimating the net worth of a company, or even trying to sell real estate.

Use value, when applied in the valuation of agricultural land, attempts to determine a value based upon the actual production of the land and removes other influences that affect the market value of real estate. A survey of all fifty states revealed that forty-three employ some version of use value, rather than a market value standard, for determining agricultural land values for property tax purposes.

One of the first steps a county appraiser determines is classifying each parcel of property. Kansas Statute 79-1476 states "land devoted to agricultural use" includes various forms of agricultural and horticultural crops, and the raising of livestock. There are some exceptions listed such as land for recreational purposes, suburban residential acreages, and rural and farm home sites. The dilemma for many county appraisers is when a mixed use occurs, particularly on the smaller parcels. Some states have a minimum size and or a threshold of gross income from sales of agricultural products.

There are three typical farming and ranching types of operation: owner operated, cash rented, and landlord/tenant crop share basis. When agricultural land is not owner operated, the most common method of renting agricultural land in Kansas is on a

landlord/tenant crop share basis. This method of arriving at net income is used in Kansas as well as in a majority of other states. By using the landlord's share method, the net income to the land or real estate is isolated.

To stabilize values from large swings in the economy, the statute requires eight years of cropping data be used to stabilize net incomes and values. This adds a complexity to the valuation process that makes understanding somewhat difficult to explain. Eight years of crop production, yields, and commodity prices are averaged to an annual basis. Using eight years of data creates a more consistent tax bill for agricultural property owners and also provides local governments with even revenue to provide local services such as farm to market roads, conduct elections, and to record real estate documents and other local services needed.

Using wheat production as an example, with seven average years—twenty-eight to forty-one bushels per acre, and one poor yield year—five bushels per acre, the eight-year average is:

$$\frac{36 + 33 + 38 + 41 + 28 + 32 + 37 + 5}{8} = \frac{250}{8} = 31.25 \text{ bushels}$$

The example illustrates that one low yielding year does bring the average yield down, however only slightly, about ten percent. Equally important are commodity prices, a second factor. In the above illustration when yields are down, wheat prices increase, the weighted average of the poor yielding year has even less of an impact.

A third factor, which is more constant than yields and prices are production costs, or the expenses of seed, fertilizer, herbicides, and other expenses paid by a landlord, in a crop sharing arrangement. These expenses are incurred independent of yields.

A fourth factor of use valuation is determining a capitalization rate. Kansas's statute specifies the capitalization rate is based on a five-year average of what is now the Farm Credit Service new mortgage rate as of July 1st of each year. Again, this is a five-year average, which is fairly interdependent of the agricultural economy. In addition, the director of property valuation adds a discretionary rate of $\frac{3}{4}$ of a percent to $2\frac{3}{4}$ percent. Kansas is the only state with an added rate.

Executive Summary

This report is prepared as part of the International Association of Assessing Officers (IAAO) Technical Assistance Project concerning agricultural use values in the state of Kansas. The project team consisted of Dr. Jean Adams and Dr. Roy Adams, retired professor of Economics from Iowa State University; Dr. Darrel D. Kletke, Professor of Agricultural Economics at Oklahoma State University; David Wheelock, IAAO Executive Director and Roland Ehm, IAAO Director of Research.

The first sections of this report:

1. Explains why use valuation is appealing and discusses basic components of the procedure.
2. Shows how changes of the capitalization rate can have large effects on assessed values;
3. Discusses how risk and inflation affect valuation and the choice of the proper capitalization rate;
4. Demonstrates that a significant change in the assessed value of agricultural land would result in noticeable redistributions of the impact of property taxes – both within counties and among counties; and
5. Explains how using a multi-year average of net incomes in the valuation process adds stability to assessments, but also can keep assessments high during agricultural economic downturns.

Other objectives of this project were to examine, evaluate, and recommend changes in the procedures that the Division of Property Valuation, Department of Revenue for the State of Kansas, uses to calculate use values for agricultural properties. These objectives were accomplished by first reviewing current procedures. This involved a detailed analysis of all steps involved: where the data came from, how the data were manipulated, and the appropriateness of the results obtained. The results were placed in context by examining use value procedures in the fifty other states. Based on these efforts, six recommendations were made:

1. The statewide capitalization rate should be fixed at the current (or some other) rate. Rates applied in each county should continue to be adjusted by the local tax rate.
2. Procedure descriptions for 1997 and subsequent years should be revised to reflect procedures currently in effect. Particularly, when in a future year the mix of crops occupying more than 5 percent of the acres changes, the net incomes for prior calendar years should not be recalculated.
3. Because well depth is not a good measure of how far water is being pumped, it is recommended that a measure more nearly reflecting the lift be used.
4. Irrigated soils should be assigned a Soil Rating for Plant Growth (SRPG) value based on the assumption that the soils are irrigated and thus moisture stress will be reduced.
5. County appraisers should have the authority to make changes in property values used for individual soil-mapping units when the reasons are justified and changes are approved.
6. Educational programs should be offered to property owners in Kansas to acquaint them with data sources, goals, computational procedures, and expected results.

Use value estimation procedures are already well developed. Each tract should be valued correctly relative to all other tracts. Implementation of the recommendations generated in this report will help improve an already excellent system.

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Use Valuation

Why Consider It?

There are at least two major reasons to base property tax assessments of agricultural land on use value rather than market value: market values may be too high relative to the income generated by farming the land and market values are periodically unstable, rising or falling more rapidly than the income-generating capabilities of the land. During periods such as the 1970s when land values in the midwestern cornbelt rose rapidly, many observers felt that speculation and excessive optimism were fueling price increases above what was justified by the long-run income-producing capacity of farmland. Farmland owners and operators then faced property tax increases that they perceived to be rising in excess of their ability to pay, based on long-run income from farming.

Use values based on a moving average of the farm income potential over several years can be constructed in a way that produces both lower and more stable valuations than do market values. Of course, use values are not necessarily lower than market values; the relationship depends on the use value formula used. In addition, stability can be added to assessments without a use valuation process; using a multiyear moving average of market values in place of year-by-year market values will reduce the rate of change. However, farm market values do seem to rise and fall more rapidly than use values (as experienced by some states in the 1970s and 1980s), so that a moving average of market values may not adequately address the concerns motivating a consideration of use values.

How to Do It

In principle, use valuation is similar to the income approach to value. In both cases, one computes the discounted present value of the income that can be expected from an asset. For an asset, such as land, that is hoped will produce income forever, the present value formula is infinitely long, but by a mathematical formula can sometimes be reduced to a deceptively simple expression. If the annual income from the asset can reasonably be expected to be constant over time or to grow at a constant rate, and if the discount rate (interest rate) and inflation rate can be assumed to be fairly stable for several years ahead, the value of an asset (V) is simply

$$V = \frac{R}{i - g}$$

where R represents annual returns (income) from the asset, i is the appropriate interest rate, and g is the expected growth rate of annual returns from the asset.

Although the formula appears simple, the devil is in the details—particularly in the denominator, but even the numerator R can be problematic.

As a first approximation, the numerator R should be the annual income that the asset can produce. For farmland, a simple measure of this is annual cash rent. Less simple measures can also be used; for example in Iowa, R could be constructed from the corn-suitability rating of the land and estimates of the annual income per acre that could be obtained by farming it.

Consider an acre of land for which the fair market value of cash rent is \$50.00 per acre per year and suppose that the rental rate is not expected to grow (or fall) in the foreseeable future. If no change in the rental rate is foreseen, g in the formula above is zero and disappears. The present value (use value) of the acre is then simply

$$V = \frac{\$50.00}{i}$$

Now a difficult issue arises. What interest rate should be used in the denominator? An example shows the importance of that choice.

If one were to use the real, risk-free interest rate on inflation-indexed U.S. Treasury bonds currently about 4 percent, the value of the acre of land would then be

$$V = \frac{\$50.00}{.04} = \$1,250.00$$

However, if one used an interest rate based on current mortgage rates, the figure would be closer to 8 percent. With this rate, the value of the acre would be only half as large:

$$V = \frac{\$50.00}{.08} = \$625.00$$

As a middle ground, one might use the interest rate on ordinary (not inflation-indexed) long-term U.S. Treasury bonds, currently about 6 percent. With this rate, the value is

$$V = \frac{\$50.00}{.06} = \$833.33$$

These examples show that the choice of the interest rate for computing use values may be the single most important decision affecting the resulting land assessments.

What is the correct rate to use? Both risk and inflation must be considered. If there were none of either, the three rates presented above would be about the same. But farming is clearly more risky than drawing interest from U.S. Treasury bonds, so risk must be considered; inflation, although currently subdued, cannot be safely ignored either.

Of the three interest rates considered above, the interest rate on inflation-indexed U.S. Treasury bonds contains no risk premium to cover the chance of default and no inflation premium to compensate for the erosive effect of inflation on the real value of principal. For inflation-indexed bonds, the principal value of the bonds is marked up as inflation occurs, so no premium is needed in the interest rate.

Ordinary (non-inflation-indexed) U.S. Treasury bonds do contain an inflation premium in their interest rate. Currently it is about 2 percent (6 percent on these bonds minus 4 percent on the inflation-indexed U.S. Treasury bonds), indicating that investors currently expect about 2 percent inflation in the foreseeable future. U.S. Treasury bonds contain no significant risk premium because the risk of default on these bonds is considered to be nearly zero (or as close to zero as any financial asset in the world).

Mortgage interest rates contain both an inflation premium and a risk premium. The risk premium approximates the lenders' perception of the probability of default on the loan, plus some compensation for taking the risk. Mortgage rates of 8 percent, while ordinary U.S. Treasury bonds paying 6 percent have a 2 percent inflation premium, would indicate that the

risk premium in mortgage rates is also about 2 percent. Mortgage rates of 9 percent would imply a 3 percent risk premium.

One way to address the issue of risk is to compute use values by (1) using cash rents—or a similar cash-flow income magnitude—as a measure of the current annual cash-flow returns to landowners; (2) ignoring any possibility that annual cash-flows may rise or fall within the relevant future; (3) ignoring any possible capital gains or losses as part of the return to landowners; and (4) using a typical interest rate on loans for land purchases as the discount rate (capitalization rate) in the valuation formula.

Using the numbers from the preceding discussion, the value of the hypothetical acre of land would then be

$$\text{Value} = \frac{\text{cash rent}}{\text{mortgage rate}} = \frac{\$50.00}{.08} = \$625.00$$

To add stability to the values, one could base assessments on a moving-average (perhaps five years) of annual valuations, and to delay changes, one could add a lag of a few years. (This approach mirrors what Iowa did in the 1970s.)

What could be wrong with this procedure? Critics argue that it ignores one part of the return from owning land—namely capital gains or capital losses resulting from changes in the market value of land. These can be slow and steady or sudden and dramatic. There can be large capital gains (such as Iowa land in the 1970s) or there can be large capital losses (such as Iowa land in the 1980s). Over the long run, land values may roughly follow the general price level or the rate of inflation or deflation.

How can these be included in the valuation formula? One way is to add/subtract capital gains/losses in the numerator of the valuation formula.

Using the middle-ground value of land in the above formula, or \$833.33, and assuming that the value rises by the currently expected inflation rate of 2 percent per year ($\$833.33 \times .02 = \16.66), this could be added to cash rents in the numerator to produce a valuation of \$833.33.

$$V = \frac{\$50.00 + \$16.66}{.08} = \frac{\$66.66}{.08} = \$833.33$$

An equivalent approach is to go back to the first formula in which the growth of income stream is accounted for. One could argue that changes in the value of the land (plus or minus) can reasonably be expected to be reflected in changes of cash rents. If this occurs at approximately the currently expected inflation rate in the United States (about 2 percent), the value again becomes \$833.33.

$$V = \frac{R}{i - g} = \frac{\$50.00}{.08 - .02} = \frac{\$50.00}{.06} = \$833.33$$

Finally, one could opt to omit inflation, deflation, capital gains, and capital losses from of the formula altogether. If so, it could be argued that if these are to be left out of the numerator (returns) and left out of income growth considerations, they should also be left out of the interest rate used in discounting. To do so, one would subtract the expected inflation rate from the mortgage rate and use .06 (or .08 - .02) as the discount rate applied to a constant rental rate. This procedure would leave in the discount rate a 2 percent allowance for risk. This again produces a valuation of \$833.33.

$$V = \frac{\$50.00}{.06} = \$833.33$$

If possible capital gains and losses on land, as well as the possible growth of rental rates (cash-flow returns) are ignored, but an inflation premium and a risk premium are included in the discount rate, the resulting value is

$$V = \frac{\$50.00}{.08} = \$625.00$$

This might be considered too low.

However, allowing for potential capital gains from land, or allowing for potential growth of rents (cash-flow income), or using a discount rate (capitalization rate) that assumes no inflation may produce valuations not much lower than market values of land.

Constructing a use valuation formula that generates assessed values different from market values takes the process away from pure economics. Economists study market forces to explain market values. Applying use values is in part asserting that economics alone should not be allowed to determine assessed values. It is at least in part a political decision to modify, adjust, or ignore some economic forces. This is not to say it is unwarranted. Across the United States and throughout its history, it is very common for some assessed values to be determined on a basis different from market value. If politicians decide that unbridled market forces are having undesired effects on some group, there is a precedent to intervene. The relationships explained above show there are several ways to do this. To lower valuations, reduce the numerator and/or raise the denominator of the use valuation formula. To raise valuations, increase the numerator (estimated income, for example by including estimated capital gains) or reduce the discount rate.

Tax Impact, Tax Shifting, and Tax Incidence

The impact of a tax falls on the entity required by law to pay it. For example, laws usually require that property owners pay property taxes on their property. For retail sales taxes, laws typically require that sellers send the tax dollars to the government, although the intent of the law is that those purchasing the taxed items pay the tax. In many states, the law requires that retailers explicitly add the tax to their prices so that buyers will effectively pay the tax and know that they are doing so. In this case, the tax is effectively shifted from the seller to the buyer if the retailer does not reduce the pre-tax price of the taxed item below what would have been charged in the absence of the tax.

The incidence of a tax is on the entity that pays the tax after any shifting has occurred. If a tax is not shifted, its impact and incidence are the same. For example, property tax on an owner-occupied home cannot be shifted, at least in the short run, so its impact and incidence are both on the homeowner. By contrast, the retail sales tax generally is thought to be shifted from retailers (who bear the impact) to buyers who bear the incidence of the tax because prices usually are raised by the amount of the tax. Similarly, property taxes on rental property

may be shifted from the property owner to the tenant. In fact, it is common for long-term rental and lease agreements to contain a clause stipulating that any property tax increase will quickly be added to the rent paid by the users of the property.

With farmland, changes in property taxes paid by owner-operators are almost certainly not shifted from the owner-operator in the short run. Prices received by farmers for their produce are determined in national and international markets, and farmers in one state are generally not able to increase the prices they receive in response to a property tax change. Kansas's wheat farmers might produce enough of the total supply of wheat to be an exception if they acted in concert, but farmers are generally affected by price setting, not price-setters themselves. However, some tax shifting could conceivably occur, even for agricultural land. A landowner who rents land for cash or a share of the crop might attempt to change rental terms in response to a tax change, but economic theory suggests this is not likely to be successful.

Determining the impact of taxes (who nominally pays) and the effect of tax changes on tax impact is fairly straightforward; however, determining the incidence of taxes and tax changes is more complex and controversial. Whether taxes are shifted depends on market conditions in each market where shifting might occur, making generalizations about results difficult and somewhat uncertain. Among economists there is not a complete consensus about the incidence of all property taxes. However, there is general agreement that taxes on land are not shifted. Because the supply of land is fixed, reducing supply to raise rental rates is unlikely; thus, landowners bear both the impact and incidence of land taxes.

However, changes in land taxes require changes in other taxes (if total property tax collections are to be maintained), so it is useful to bear in mind that changes in taxes on rented structures may be shifted from the owner to the user.

This study analyzes changes in the impact of property taxes, but will not attempt to state definitively the ultimate incidence of all taxes and all possible tax changes. Knowing the impact of taxes and the effect of possible tax changes on the impact of taxes is important. In many cases, such as owner-farmed land or owner-occupied housing, the impact and incidence are the same. Furthermore, many taxpaying voters are concerned about who nominally pays taxes, even if they are eventually successful in shifting the tax burden to others. For example, owners of rented structures generally dislike increased taxes on their buildings even if they

may be able to shift the increased taxes to renters of the buildings in the long term. The shifting process can entail short-run losses and a permanently smaller market even if the taxes do eventually get added to rents. Tax shifting is not painless even for those who manage to shift taxes from themselves to others.

Redistribution of Property Tax Impact among and within Taxing Districts as a Result of Changes in Agricultural Land Assessments

In this section, changes in agricultural land assessments and their effect on other taxpayers are analyzed. For illustrative purposes, a 25 percent decrease and a 25 percent increase in agricultural land assessments are examined here. Consider two scenarios: one is that land assessments are changed without any change in tax rates; the other is that tax rates are changed enough to maintain tax collections. Tables 1–12 summarize the numerical calculations used in this section (see appendix).

Assuming that total property tax collections are to remain the same, if taxes on agricultural land are changed, taxes on other types of property must also be changed. However, this effect would not be uniform across types of property or across all areas of a state. In general, agricultural land tax changes have the greatest impact on other property owners in counties where agricultural land makes up a significant part of the tax base and have the least effect on other property owners in counties where agricultural land is a small part of the tax base. Ironically, agricultural land tax relief is easiest to give where it is needed by the fewest people and most difficult to give in counties where the most people may need it.

Every county has not been analyzed in detail here because the general effects can be illustrated by focusing on two counties with different compositions of property—Greeley County, where there is a significant percentage of agricultural land and little residential and commercial property, and Sedgwick County, by contrast, where there is also a significant amount of agricultural land, but the total amount is but a small part of total property of the county.

Redistribution of Property Tax Impact among Counties across the State

A change in the assessed value of agricultural land would result in a redistribution of the impact of property tax both across the state (among local taxing districts, such as counties) and within local taxing districts. The redistribution among taxing districts across the state would result from the statewide levies for building funds and for school finance. The following analyses shows that the impact of this redistribution would be relatively small for some counties, but significant for others.

Subsequent analysis regarding the redistribution among types of property within taxing districts shows that it too would be quite significant within some districts, although it would vary widely across the state. In highly urbanized areas, redistribution would be slight, but in districts where agricultural land is a significant part of the tax base, the redistribution between agricultural landowners and other types of property owners would be substantial.

State Building Funds

Kansas currently has two statewide property tax levies for building funds. There is a 1-mill levy for the Kansas educational building fund and a .5 mill levy for the state institutions building fund, for a combined rate of 1.5 mills. With these statewide levies, a change in agricultural land assessment would result in a redistribution of the impact of property taxes among counties.

With statewide-assessed property valuation of \$19,644,838,344 for 1999 (*Statistical Report* 139), the state reported that it collected \$29,654,694 for the building funds (*Statistical Report* 131). It should be noted that collections exceeded 1.5 mills as a result of penalties (Kansas Department of Revenue).

Effects of Changes in Agricultural Land Assessments with Unchanged Tax Rates

In 1999, the statewide-assessed valuation of agricultural land was \$1,351,367,730 (*Statistical Report*, 138). If changes in assessment procedures for agricultural land reduced land valuation by 25 percent, agricultural land assessed value would decrease by \$337,841,933 to \$1,013,525,798, and state total property valuation would decrease to about \$19,306,996,412. The base for applying the 1.5 millage rate for the building funds would

decrease to 98.28 percent of what it was before the 25 percent decrease in assessed agricultural land valuation. Tax collections for the state building funds would drop by \$510,061, or 1.72 percent, to \$29,144,633.

If assessed valuation of agricultural land were increased by 25 percent, agricultural land assessed value would increase by \$337,841,933 to \$1,689,209,663, and state total property valuation would increase to about \$19,982,680,277, or 101.72 percent of its level before the 25 percent increase. Tax collections for the state building funds would increase by \$510,061, or 1.72 percent, to \$30,164,755.

The effect of these changes would not be uniform across counties because the share of agricultural land in total property valuation varies widely across Kansas. For example, in Sedgwick County, the assessed value of agricultural land is \$19,242,597, while total assessed value in Sedgwick County is \$2,609,883,494 (*Statistical Report*, 312–13). Thus, agricultural land in Sedgwick County is only 0.737 percent, or about seven-tenths of 1 percent, of total assessed value in the county.

By contrast, in Greeley County, the assessed value of agricultural land is \$12,050,640, while the total assessed value of property is \$24,517,191 (*Statistical Report*, 210–11). Thus agricultural land comprises 49 percent, or nearly one-half, of the assessed value of all property in Greeley County.

If the valuation of agricultural land were changed significantly, a change in the amount of tax collected by the state from counties for the state building funds would vary widely across the state. For example, a 25 percent decrease in agricultural real estate values would have a very small percentage effect on the amount of property tax collected from Sedgwick County for the state building funds. Agricultural land assessed valuation in that county would decrease by \$4,810,649. This reduction is only 0.18 percent, or less than two-tenths of 1 percent of total assessed value in the county.

The amount collected from Greeley County would decrease significantly, however. There, a reduction in agricultural real estate assessments by 25 percent would reduce total property assessments from \$24,517,191 to \$21,504,531, which is a 12.29 percent reduction in total property assessments. Revenues from Greeley County for the state building funds would decrease by that same percentage.

Similarly, if agricultural land valuations were raised by 25 percent, taxes from Sedgwick County for the state building funds would rise by less than two-tenths of 1 percent, but taxes from Greeley County to those funds would rise by 12.29 percent.

Effects of Changes in Agricultural Land Assessments with Offsetting Tax Rate Changes

The state might choose to offset the change in state building funds collections by changing the millage rate enough to maintain state tax collections. To offset a 25 percent reduction in assessment for agricultural land, the statewide levy would have to be increased to 1.526 mills to counteract the reduction of the tax base to 98.28 percent of what it was ($100/98.28 \times .0015 = .001526$). This is 101.75 percent of the previous millage rate, thus constituting a 1.75 percent increase of the tax rate.

For Sedgwick County, the combined effect of the 25 percent lower agricultural land assessed valuation and the slightly higher millage rate would be a small percentage increase in property taxes paid by the county for state building funds. In the absence of these changes, total assessments in Sedgwick County were \$2,609,883,494; using the millage rate of 1.5, tax collections from Sedgwick County for state building funds would be \$3,914,825. After reducing agricultural land assessments by 25 percent, total assessments in the county would be \$2,605,072,845; applying the new millage rate of 1.526, tax collections would be \$3,975,341. Thus, the combined effect of the 25 percent reduction in agricultural land assessment and the new millage rate would be an increase of \$60,516 in tax collections for state building funds from Sedgwick County. This is a 1.55 percent increase in revenues from the county.

For Greeley County, the combined effect of the 25 percent lower agricultural land assessed valuation and the slightly higher millage rate would result in a significant percentage decrease in property taxes paid by the county for state building funds. Before the changes, total assessments in Greeley County were \$24,517,191; at the millage rate of 1.5, tax collections from the county were \$36,776. The 25 percent reduction in agricultural land assessments would reduce total assessments in Greeley County to \$21,504,531; at the new millage rate of 1.526, tax collections would be \$32,816. Thus, the combined effect of the 25 percent reduction in agricultural land assessments and the new millage rate would be a

decrease of \$3,960 in tax collections for state building funds from Greeley County, or a 10.77 percent decrease in tax collections from Greeley County.

The above examples show that reducing agricultural land assessed valuations and then raising the millage rate to offset the loss in tax collections would result in substantial percentage decreases in tax collections for state building funds from counties in which agricultural land comprises a relatively large share of all assessed property and would result in a fairly minor percentage increase in tax collections for state building funds from counties in which agricultural land is a relatively small share of all assessed property.

The differential effects among counties also can be examined by considering the impact of a 25 percent increase in agricultural land assessment and allowing for the state to reduce the millage rate for the state building funds to maintain tax collection. In this case, the new millage rate would be reduced to 1.475 mills to compensate for the increase of \$337,841,933, or 1.72 percent increase, in total property valuations ($100/101.72 \times .0015 = .001475$). In Sedgwick County, where only a small percentage of all assessed property is agricultural land, the combined effect of the 25 percent increase in agricultural land assessments and the lower millage rate would result in a reduction of county collections for state building funds of \$58,151, which is a 1.49 percent decrease in the county's collection for these funds. By contrast, in Greeley County, in which agricultural land assessments are almost half of all property assessments, the combined effect of the 25 percent increase in agricultural land assessments and the lower millage rate would cause an increase of county collections for the state building funds of \$3,831, or a 10.42 percent increase in the county's collection for these funds.

The above examples show that a change in assessed value of agricultural land, regardless of whether there is an increase or a decrease in these values and whether there is an offsetting change in the millage rate for state building funds, would result in a greater percentage change in tax collections in counties in which agricultural land is a higher percentage of all property assessments compared with counties in which agricultural land is a lower percentage of all property assessments. Thus, any change in agricultural land assessment values would result in a change in the distribution of state property tax collection among counties.

School Finance System

The Kansas school finance system provides another example of how changed agricultural land assessments would redistribute the impact of property taxes across the state. A significant change of agricultural land valuation would result in a substantial redistribution among school districts and counties.

Effects of Changes in Agricultural Land Assessments with Unchanged Tax Rate

If agricultural land values were reduced by 25 percent and if there were no change of the Unified School District General Fund levy of 20 mills, total revenue would decrease. With agricultural land having an assessed value of \$1,351,367,730 in 1999, a 25 percent reduction would reduce that value by \$337,841,933 to \$1,013,525,798 (*Statistical Report*, 138). The total tax base for the Unified School District General Fund would drop from \$17,653,580,345, to \$17,315,738,413, which is 98.086 percent of what it was before the reduction in agricultural land assessed values (Kansas Department of Revenue). In 1999, collections for the General Fund of the Unified School Districts was \$351,928,336 (*Statistical Report*, 133). With the tax base reduced to just over 98 percent of what it had been, tax collections for this fund would be about \$345,192,428. This is a reduction of about \$6,735,908, or is a 1.9 percent decrease in funding.

Although the statewide reduction in tax collection would be only 1.9 percent, the decrease would be far from uniform statewide. In Greeley County, where agricultural land was assessed at \$12,050,640, this is more than half of the assessed value of all property in the county subject to the 20 mill school levy, which in 1999 was \$23,190,262 (Kansas Department of Revenue). This number is less than the total assessed value of all property in the county because the first \$20,000 of the value of residences is exempt. In Greeley County, a 25 percent reduction of agricultural land assessments would be \$3,012,660, which would reduce the tax base for the 20 mill school levy by that amount. This is a 12.99 percent reduction. Thus, tax collection from Greeley County for the School District General Fund would decrease by about 13 percent.

In contrast, in Sedgwick County, a 25 percent reduction of agricultural assessments would reduce agricultural assessments from \$19,242,597 to \$14,431,948—a reduction of

\$4,810,649. This would reduce total assessments from \$2,271,065,825 to \$2,266,255,176, or a .212 percent reduction (Kansas Department of Revenue). Thus, Sedgwick County's contribution to statewide school finance would drop by only about two-tenths of 1 percent.

If agricultural land value assessments were increased by 25 percent, total state assessments for school finance funds would increase by \$337,841,933 to \$17,991,422,278, or to 101.91 percent of total assessments before the 25 percent increase. With an unchanged tax rate of 20 mills, total collection would increase by about \$6,721,831, or 1.9 percent. In Greeley County, agricultural land value assessments would increase by \$3,012,660, and total property assessments would increase from \$23,190,262 to \$26,202,922, or nearly 13 percent. In Sedgwick County, agricultural land value assessments would increase by \$4,810,649, and total property assessments would increase from \$2,271,065,825 to \$2,275,876,474, which is an increase of only slightly more than two-tenths of 1 percent.

The preceding analysis demonstrates that if agricultural land assessments were reduced, revenues for schools in the state would decrease in each county and in total, but some counties' collections would fall more than others. With reduced property tax payments to the State School District Finance Fund from districts with high assessed values per student and state payments increased to districts with low assessed values per student, increased transfers to the school fund might be necessary from the state's general fund. Conversely, if agricultural land assessments were increased, school funds would be enriched, and there would be less need for money from other sources.

Two general effects of changed agricultural land valuation would result: first, a general redistribution among districts depending on the proportion of agricultural land in their property tax base and, second, a likely redistribution of the state's tax impact between agricultural landowners and other state taxpayers.

Effects of Changes in Agricultural Land Assessments with Offsetting Tax Rate Changes

To avoid a redistribution of taxes between property taxes and other tax sources, the millage rate for the Unified School District General Fund could be adjusted to offset a change in agricultural land assessments.

If agricultural land assessments were decreased by 25 percent, the tax base for the levy would decrease to .98086 or 98.086 percent. To raise the same revenue as before, the unified school district levy would need to be raised to 20.39 mills, which would be 101.95 percent of what it was before. This approximate 2 percent increase is not huge, but it is significant.

If, instead of decreasing agricultural land assessments by 25 percent, they were increased by 25 percent, the tax base for the levy would increase, as was shown previously, to 1.01914 or 101.914 percent. To maintain the same revenue as before, the unified school district levy would be lowered to 19.62 mills, which would be 98.1 percent of what it had been.

The combined effects of a 25 percent change in agricultural land value assessments and a change of the millage rate for the Unified School District Fund to maintain tax collections would vary significantly among counties.

In Greeley County, if a 25 percent decrease in agricultural land value assessments were combined with an increase in the millage rate to 20.39, school tax collections would decrease by \$52,384. This would be an 11.29 percent decrease in tax collections from the county for the Unified School District Fund. In contrast, Sedgwick County's tax collection would increase by \$787,627, or 1.73 percent. Thus, school taxes in Sedgwick County would increase by many dollars, but a small percentage, while school taxes in Greeley County would drop by a significant percentage.

A 25 percent increase in agricultural land assessments combined with an increase in the millage rate to 19.62 would increase tax collections in Greeley County by \$50,296, or by 10.84 percent. In contrast, Sedgwick County's tax collection would decrease by \$768,621—a 1.69 percent decrease. With this scenario, Sedgwick County would have a slight percentage decrease, while Greeley County would have a significant percentage increase.

Property Tax Redistribution within Counties

In addition to changes in property tax collection among counties, a change in agricultural land assessment values also would cause significant changes among classes of property within counties.

The following examples show how a 25 percent change of agricultural land assessments would redistribute property tax collection among categories of property within a

county if tax rates were changed to maintain tax collections. To keep this analysis from being exceedingly complex and intertwined with the previously discussed mechanisms that could redistribute the tax impact among counties, this section focuses on taxes collected by two counties as taxing districts. This, of course, does not include all taxes collected within a county for schools, cities, the state, and so on. However, it does illustrate the redistribution that would occur within all the various taxing districts of the counties.

Consider first Greeley County, in which significant redistribution would occur. In 1999, Greeley County as a taxing district levied \$2,260,657 of taxes (*Statistical Report*, 93) on a total assessed value of county property of \$24,517,191 (*Statistical Report*, 211), about half of which—\$12,050,640—is agricultural land (*Statistical Report*, 210). With 1999 valuations, the tax rate of the county per se as a taxing district was effectively 9.221 percent or 92.21 mills.

In Greeley County, a 25 percent reduction of assessed value of agricultural land would reduce that value by \$3,012,660 to \$9,037,980 and reduce the assessed value of all Greeley County property to \$21,504,531. To collect as much money as before, the county would have to raise its effective levy to 10.512 percent or 105.12 mills. This is a 14.0 percent increase of the tax rate. The county's taxes on property other than agricultural land would increase by that percentage. The county taxes on agricultural land would decrease, but not by the full 25 percent decrease of assessed value, because the 14.0 percent rate increase would apply also to agricultural land. The combined effect of the reduced valuation and an increased rate is that taxes on agricultural land would be 85.5 percent of what they were before. Thus, taxes on agricultural land would be reduced by 14.5 percent.

In summary, a 25 percent reduction of the assessed valuation of agricultural land in Greeley County would reduce county taxes on agricultural land by 14.5 percent and increase county taxes on other types of property by 14 percent. The similarity of these two numbers is a coincidental result of agricultural land having initially been about half of total assessed value in the county; this result would not be true in general. In fact, in Sedgwick County, a 25 percent reduction of agricultural land assessments would reduce county agricultural land taxes by nearly 25 percent while raising taxes on other property very little.

In Sedgwick County in 1999, taxes levied for the county as a taxing district were \$74,236,730 (*Statistical Report*, 119). The total assessed value of Sedgwick County's

property was \$2,609,883,494 and the total assessed value of Sedgwick County's agricultural land was \$19,242,597(*Statistical Report*. 312–13). As a taxing district, the county had a tax rate of 2.844 percent or 28.44 mills.

In Sedgwick County, a 25 percent reduction of assessed value of agricultural land would reduce its value by \$4,810,649 to \$14,431,948, but it would reduce total assessed value in the county only slightly to \$2,605,072,845. To collect as much revenue as before, the county's average levy on property would have to rise only to about 2.85 percent or 28.5 mills. Compared with the previous tax rate, the new rate would be 100.21 percent of what it was previously. This is slightly more than a two-tenths of 1 percent increase in the tax rate. It is also the percentage by which taxes on property other than agricultural land would be increased.

For agricultural land, the effect on tax collections for the county would be a combination of assessments falling to 75 percent of what they had been, with the tax rate rising slightly. The combined effect would be that agricultural land taxes for the county would be 75.16 percent of what they were before. In short, the assessment change would increase non-agricultural land taxes by about two-tenths of 1 percent and reduce agricultural land taxes to 75.16 percent of what they were before.

The differential effects of changed agricultural assessments by county can also be seen if agricultural land value assessments were increased by 25 percent. Once again, the greater the percentage of agricultural land in a county's total property assessment, the greater the extent of redistribution of county property taxes among classes of property. In Sedgwick County, a 25 percent increase in agricultural land assessments would increase agricultural land's assessed value by \$4,810,649 and would increase total property assessments to \$2,614,694,143. To collect an unchanged amount of taxes for the county, the effective tax rate would need to be lowered slightly from 2.844 percent or 28.44 mills to 2.839 percent or 28.39 mills. This would be a 0.18 percent decrease in the tax rate and would be the percentage by which county property taxes on non-agricultural land would decrease. County property taxes on agricultural land would increase by 24.78 percent as the combined result of increasing agricultural land value assessments by 25 percent and decreasing the county's tax rate to maintain its tax collections.

In Greeley County, the 25 percent increase in agricultural land assessments would increase agricultural land assessed values by \$3,012,660 and would increase total property assessments to \$27,529,851. To maintain the county's property tax collection, the effective tax rate in Greeley County would need to be lowered from 9.221 percent or 92.21 mills to 8.212 percent or 82.12 mills. This represents a 10.94 percent reduction in the tax rate, which would be the percentage decrease of county property taxes on property other than agricultural land. The combined effect of the 25 percent increase in agricultural land assessed values and the lowered tax rate would be an 11.33 percent increase in agricultural land taxes.

The analysis in this section has illustrated how a change in agricultural land valuations would redistribute the impact of the property tax for the state in general and for two counties in particular. To limit the cost of this exercise, an analysis for every county has not been done. Those who may be interested in results for other counties can substitute the appropriate numbers for those counties in the steps used for the two counties discussed here. Of course, the 25 percent increase and decrease used here were selected for illustrative purposes only. Most of the numbers used are available for all counties in the *Statistical Report of Property Assessment and Taxation*. For school financing, specific numbers on the tax base for the state and within counties were obtained from the Kansas Department of Revenue. Factored into the demonstration here were the \$20,000 per residence exemption for school levies and the fact that school district boundaries generally do not coincide exactly with county boundaries. Approximate results could be obtained by using the county valuations in the *Statistical Report*. Also, approximate results for other counties and for other percentage increases or decreases of agricultural land valuations can be obtained with numbers from the *Statistical Report* using a hand calculator, although for purposes of this report a computer was used. The tables 1–12 in the appendix to this report can be followed to obtain exact results.

Agricultural Land: Tax Levels, Changes, Rates of Changes and the Timing of Changes

Although taxes are generally disliked, they are especially unpopular when they rise rapidly or when tax changes are out of phase with changes in taxpaying ability. The experience of Iowa shows that policies intended to reduce agricultural land taxes and their rate of change had that desired effect, but also had the undesired effect of putting tax changes out of phase with changes in taxpaying ability.

In the 1970s, increased grain prices resulted in rising farm incomes and rapidly increasing land values in Iowa. The rising land values produced high and relatively rapid increases of property taxes on agricultural land. To limit the amount and rate of increase, assessments were changed from a formula that relied on a valuation based half on market value and half on use value to one based entirely on use value (the potential of the land to produce income by farming it) during several preceding years. Assessments were based on a five-year moving average of use values, but the average was applied with a two-year lag, so annual assessments were actually based on use values during years two through six preceding the assessments. Basing assessments entirely on capitalized profitability lowered agricultural land taxes, and basing them on a five-year moving average with a two-year lag reduced annual rates of change. As a result, the new system was fairly well accepted by Iowa agricultural landowners during and shortly after the rapid rise of land values in the 1970s.

However, unintended consequences resulted when farm incomes and land values fell fairly quickly in Iowa in the 1980s. When farm incomes and market values of land were rapidly declining, assessed values continued to rise for several years due to the use of the two-year lag and the five-year history of income-producing ability that had been built into the assessment formula. Thus, while taxpaying ability was falling, tax liabilities kept rising. A system designed to insulate agricultural landowners from rapid tax increases while land values boomed inevitably failed to give them rapid relief when land values plummeted. The lesson might be to beware of what you wish for; it may help you during good times, but kick you when you're down.

Background

This section of the report is to examine the procedures implemented in the state of Kansas to determine the use value of agricultural land. The intended result of this effort is a report comparing use value procedures in Kansas with those of other states to evaluate whether current procedures reach the goal of being fair and equitable to agricultural landowners, as well as to recommend changes in the system as appropriate.

This effort is part of a Technical Assistance Project undertaken by the International Association of Assessing Officers to assist the state of Kansas in evaluating the use value procedures that have been implemented in recent years. In particular, this portion of the report is to review current procedures, find possible problems, and make recommendations to improve the system.

The study began with a systematic evaluation of current procedures. The starting point was a set of documents provided by the Division of Property Valuation and prepared by the Department of Agricultural Economics at Kansas State University. For each of the principal land uses—dry cropland, irrigated cropland—and pasture and range, data and procedures used were summarized and an example set of calculations was provided. The calculation procedures for each land use were checked for appropriateness and relevancy. Further, data sources were evaluated for appropriateness.

In addition to examining procedures and data sources, individuals knowledgeable about soils and soil productivity were consulted to determine whether or not use value was an appropriate utilization of the productivity index. The Kansas State University personnel responsible for estimating net income for each soil-mapping unit for each county in Kansas were consulted concerning estimation procedures and suggestions for improving the current system. Finally, several Kansas County Appraisers were consulted about the day-to-day practicalities of using the use values as estimated by the Division of Property Valuation.

The remaining portions of this report begin with a discussion of use value and why it exists. There is a discussion of current Kansas procedures followed by a discussion of approaches in other states. The use value determination procedures for thirty states were studied in order to obtain relevant information. There is a discussion of capitalization rate selection and the implications of making a change in Kansas's current procedure. Finally, there is a discussion of particular issues that have been raised about current procedures, as

well as a presentation of the thoughts of a small group of Kansas County Appraisers. The report concludes with recommendations for Kansas.

Relevant Taxation Concepts

Goals of Operating a Tax Program within a State

Taxation exists to provide services for the operation of local government. The first goal of taxation is that the total amount of taxes collected equals the cost of services the governing entity is requested by its citizens to provide.

A second goal of implementing a tax program is equity. Each taxpayer should pay a fair share relative to what every other taxpayer has to pay. A secondary equity goal is that taxation in each county should be equitable with taxes in other counties.

The Concept of Ad Valorem Taxation

In basic tax theory, ad valorem taxes are calculated as a percentage of the value of assets owned. Increases in asset value occur because of increases in demand or decreases in supply, thus leading to increases in taxes. The general idea is that as assets increase in value, an owner will be better off financially and thus capable of paying the higher taxes associated with higher values.

Ad valorem taxes are not a straight tax on wealth even though it is generally assumed that someone having more property assets has more wealth than someone who does not control those assets. Wealth is typically determined by taking the value of assets owned and subtracting the debt on those assets. However, debt is not taken into account when determining ad valorem taxes. Thus it is possible for landowners to possess significant assets but have relatively little wealth.

Use Value and Ad Valorem Taxation

Historically ad valorem taxation is based on the market value of an asset, rather than on its use value. For agricultural property, this means taxes are based on market value no matter what use is being made of the land. When use value is stipulated, is the tax still a tax on an asset's value, or is it more nearly a tax on income? The term use value implies that the tax will be based on the asset's current or nominal use. As a result, if the land is, or should be, used in a highly productive way, taxes will be higher than if the asset is used less productively. (True ad valorem taxation would not consider use and would be a percentage of market value.) Because use is an important factor, a landowner has some control of the taxes paid by choosing a more productive or less productive use for the property. Although a landowner has some control over the use, it is generally thought that the most productive use will dominate and that taxes will be calculated based on that most productive use. In the end, use value taxes are, in many cases, more like taxes on average expected incomes than they are ad valorem taxes. In many states, use value is determined by finding the expected net income per acre and dividing an expected rate of return into that net income to find an asset value capable of supporting the chosen rate of return. The resulting asset value is identified as the use value of that asset.

Reasons for Establishing Taxes on Land Based on Use Value

The application of traditional ad valorem taxation to agricultural land has posed a significant difficulty to farmers and ranchers attempting to make their living from their agricultural operations. First, land values increase because there are multiple uses for agricultural land. Investors buy land because they anticipate increases in land value brought on by urban expansion or other development. Also, there are buyers who purchase land for recreation or other uses. Second, the size of a farm required to make a living has increased for a number of years, requiring farmers to compete with other farmers (as well as non-farm buyers) to enlarge their operations. Third, farm incomes are not correlated with land values. Agricultural production per acre has increased for a number of years, but as productivity has increased, product prices have decreased. Resulting net returns per acre for most farmers average less than in earlier years, yet total property taxes are generally based on the number of

acres owned. Fourth, land values increase because the supply of land is constant, while the population is increasing, resulting in more potential buyers for each tract of land placed on the market. All of the above factors cause property values and thus market value based taxes to increase faster than net incomes from farming.

A Motivation for Use Value Taxation

The concept of use value was introduced because it was recognized that farmers and ranchers face the difficulties described above. Further, farmers must cope with increasing costs of production (including the purchase of additional land), while receiving lower prices for their products. As land values increased, market value caused taxes on land to increase, resulting in a higher tax burden per acre. In addition, because it was necessary to increase acreage to maintain the same level of disposable income, farmers were paying taxes on more acres. For farmers the most difficult thing to accept with market value driven ad valorem taxes is that taxes can and do increase without any offsetting benefit to the farm owner. Although the value of the farmer's assets has increased, those benefits can only be realized when the property is sold. In the short run, the only way the farmer can benefit is by selling the asset or borrowing from a bank using the increased value as collateral. In many cases, the farmer already has debt, and bankers are reluctant to lend against marginal changes in value.

A Second Motivation for Use Value Taxation

To many, lands capable of producing agricultural products for food are a precious resource, and it is in the best interest of society to protect that resource. Imposing taxes on agricultural property based on market value might cause agricultural producers to sell their land for other uses if taxes are so high that operations can no longer be profitable. One way to keep land in agricultural production is to tax the agricultural land based on its use for agricultural purposes.

Along with use value taxation, many states have gone even further to keep land in agricultural production. Some states use agricultural zoning. If the zoning laws are strict (it is difficult to get a change in the zoning of a tract), the result is that the spread between use values and market values of agricultural land will be relatively small. Strict agricultural

zoning reduces the need for use value taxation, however agricultural landowners often have difficulty with strict zoning because their land assets do not participate in value increases.

Another tool that some states use to keep agricultural land in production is requiring the landowners participating in use value taxation to pay a penalty tax when land is removed from agricultural use. For example, when land is sold, landowners might be required to repay all the savings use value taxation has afforded them during the previous five years.

Some states take a different approach to taxation. Rather than implement use value taxation, Michigan, for example, exempts agricultural properties from school taxes. This approach accomplishes much the same result as use value taxation, but permits agricultural tracts to be valued using market valuation methods. Exempting agricultural properties from school taxes encourages owners to keep land in agricultural production and makes it unnecessary for county appraisers to estimate use values. The state of Minnesota, as another example, goes a little further in encouraging land to stay in agricultural production by giving agricultural landowners a tax refund.

Whether the motivation for use value is provide a tax break because of the high value of the land resource or to enhance agricultural production, nearly all states have some form of use value taxation. The goal is to make the tax fair to both landowners and the population who rely on tax revenues to support services needed in the local community.

Should Use Value Taxes be Based on the Value of the Asset or on the Income Stream Generated from the Asset?

Almost everyone agrees that agricultural use value taxation is appropriate compared with taxes based on market value. Yet, how far toward an income tax on a specific tract should a state go to have taxes based on the income generation or use value? At present, many states take into account expected or average receipts and expenses with resulting net income capitalized into value. The receipts and expenses used are averages; as a result the management capability of the owner is not taken into account. The amount of debt held by the current owner is also not considered. As a result, use value taxes are based on average prices, expenses, yields, and debt assumptions. A primary question is: How much detail concerning income and expense should be required to estimate a use value that is inherently fair to the property owner?

Property taxes exist primarily to support the operation of local government. To a significant degree, the amount of funds required to provide a given set of services is known. In general, the tax rate required is determined by dividing the amount of funds required for government operation by the value of all assets (market value where appropriate plus use value where appropriate) within the jurisdiction. If use values are too low relative to market values, the tracts valued at market value will bare a disproportionate amount of the tax, and vice versa. For locations where most assets are agricultural, tax rates on agricultural assets will have to be adequate to support a desirable level of services.

A complicating factor exists when state funds and county or local funds are combined to operate local services. In these cases, relatively low asset valuations effectively shift costs of services from local to state funding sources.

In the end, the most important factor in determining use value is that assets subject to use value be valued equitably to each other and to those assets valued using market value.

The Future of Use Value Taxation

Because ad valorem taxes are generally a proxy for a wealth tax, perhaps the fairest tax would be taxing individuals based on their net worth. Although fair, a tax on net worth would be difficult to implement because nonresidents own many assets. In what county (or state) would the tax be paid? How would each county get its share of the tax revenues? In addition, many astute individuals would be capable of hiding their net worth to minimize taxes. As a result, although a tax on net worth might be fairer, it would be difficult to collect. Therefore, ad valorem taxation, with assets taxed at a percentage of their value, is likely to continue. In addition, in an effort to be supportive of agriculture and to preserve the agricultural land resource base, states will continue to adopt use value taxation for agricultural assets.

Current Kansas Property Valuation Procedures

This portion of the report deals with current procedures used to value agricultural properties in Kansas. This discussion will begin with dry cropland. Subsequently, the methodological differences and additional considerations for irrigated cropland and native pasture or range will be presented. The purpose of this part of the report is to establish a common starting point for evaluation of current methodologies.

Valuing land in all three agricultural uses (dry cropland, irrigated cropland, and pasture or range) depends on information from multiple sources. Information for valuation comes from the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture; from Kansas Agricultural Statistics, which is associated with the National Agricultural Statistics Service of the United States Department of Agriculture; and from the Department of Agricultural Economics, Kansas State University. In addition, information on irrigation water use is taken from publications prepared by the Division of Water Resources for the state of Kansas. The additional information required for range is the estimated carrying capacity for each soil-mapping unit prepared by the Kansas State University Department of Agronomy and NRCS.

Dry Cropland

Following is a discussion of data requirements and expected results for each type of land use. Rather than spend time presenting the calculation details for each, a discussion of the data requirements and their sources will be combined with a discussion of the results of the analysis.

Each county appraiser has assembled the number of acres of each soil series-mapping unit for each tract in the county. This information is available from the soil survey prepared for each county by the NRCS. The county appraiser maintains the number of acres of each soil-mapping unit in each of the three uses (dry cropland, irrigated cropland, and pasture) for each tract in the county. The additional information needed to calculate the appraised value of each tract is the use value per acre of each soil-mapping unit for each of the three uses. A tract's appraised value is determined by summing the number of acres of each soil-mapping unit in one of the three uses, multiplied by the use value per acre for that soil-mapping unit.

In addition to acreage, NRCS has prepared a productivity index called the Soil Rating for Plant Growth (SRPG) for each soil-mapping unit. The SRPG is used to estimate the relative productivity of both dry and irrigated cropland.

Kansas Agricultural Statistics collects and summarizes a set of information at the county level. Included are the acres of each crop grown, acres summer fallowed, average yields, and average prices. The soils information from NRCS and the Kansas Agricultural Statistics information is provided to the Department of Agricultural Economics at Kansas State University. University personnel are charged with using the provided information, as well as the information they collect, to estimate the expected average net income per acre for each soil-mapping unit in each county.

Annually, Kansas Agricultural Statistics conducts surveys to determine the modal cropland share rental rates (both income and expense shares) for each crop-reporting district. Using available farm management information and publications, the Kansas State University Department of Agricultural Economics estimates landlord expenses. Starting with typical crops, average yields, and prices, the average gross income per acre is determined for each county. The SRPG index is used to estimate the expected gross income and gross expenses for each soil-mapping unit. The Agricultural Economics Department completes its yearly work by providing the Division of Property Valuation with a rolling eight-year average expected net returns for each soil-mapping unit in each county of the state.

The Kansas Division of Property Valuation completes the process of determining use value for each tract by dividing the net income per acre by the appropriate capitalization rate for the county. Figure 1 is a schematic of the calculation procedures for dry cropland.

Irrigated Cropland

Irrigated land procedures are much like those for dry cropland except that irrigation costs must be included. Although the procedures are much the same, almost all of the information used for irrigated cropland computations are different from that used for dry cropland. Remaining the same are the SRPG indices and expected commodity prices. Yields will change; the acres and mix of crops will change, and irrigation costs must be included.

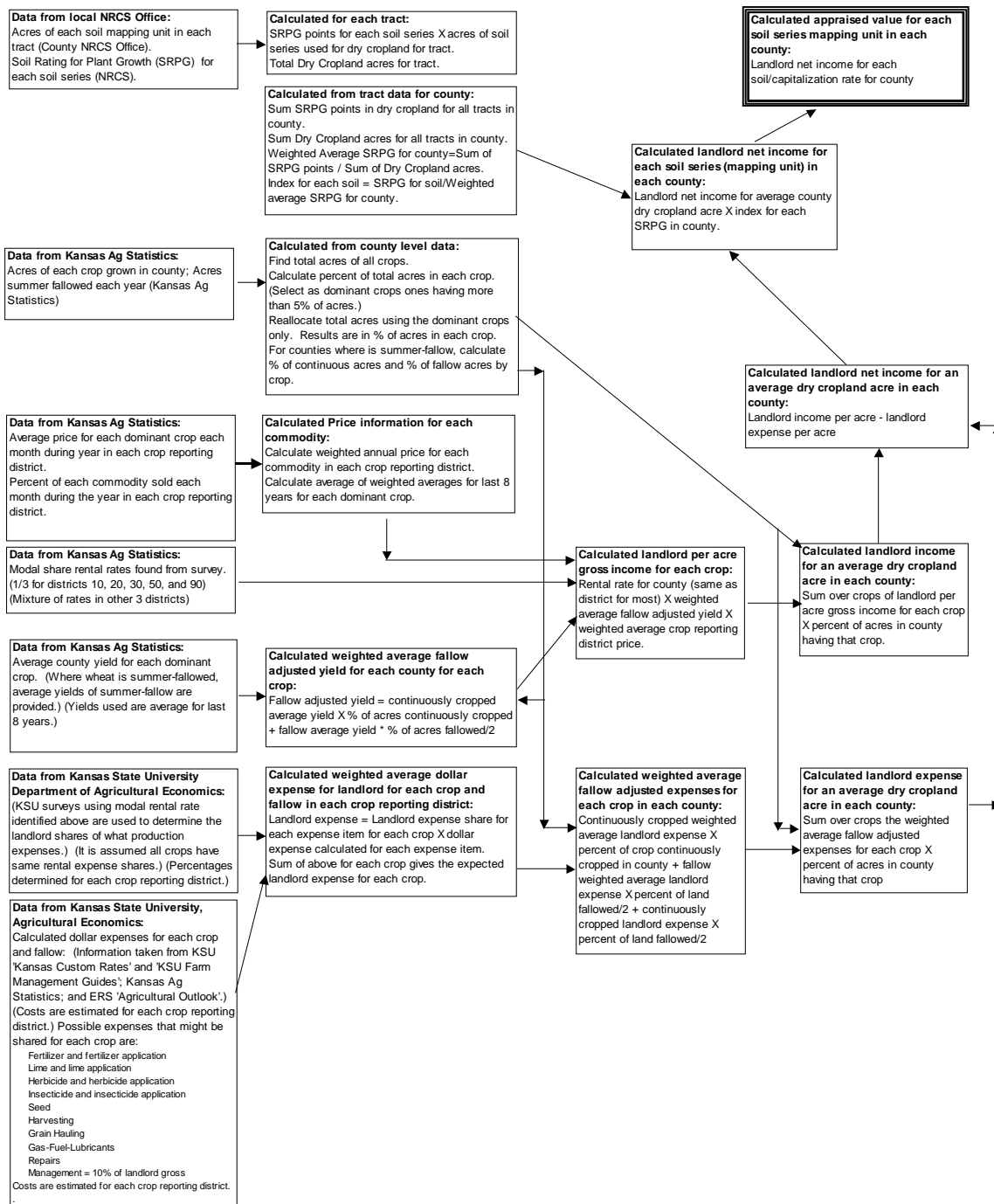


Figure 1. Dry Cropland Valuation Process in Kansas

Basic irrigation costs are estimated for each irrigation district rather than for each county. Most irrigation in Kansas is either flood or sprinkler. The observed proportions of acres sprinkled and flooded are used to combine expected sprinkler and flood irrigation costs into one set of irrigation costs per district. Irrigation costs are specified for a relevant set of well depths in each irrigation district.

The average number of inches of water applied to irrigated land is estimated for each irrigation district by dividing total water consumption in the district by the total number of acres irrigated.

Generally land that has irrigation water close to the surface is more valuable than land where it is necessary to pump water from a considerable depth. The impact of depth of well is so important that irrigation costs are estimated for depth increments of 100 feet, beginning at a depth of 50 feet. In some districts, water-lifting costs for seven well depths (100–700 feet) are calculated. The depth of each well is legally recorded information, making well depth a verifiable alternative for estimating irrigation costs.

In dry cropland procedures, there is one per acre use value for each soil-mapping unit. However, for irrigated land there can be up to seven use values for each soil-mapping unit depending on the well depth. County appraisers must determine the well depth appropriate for use on each irrigated tract. Depending on the well depth, the land will have a different net return, and therefore a different use value.

Estimated use values are based on average net incomes. For dry cropland, frequently the only difference from tract to tract is the SRPG index, and the resulting net income values vary directly with the SRPG index. With irrigated land, values vary with SRPG and inversely with the depth to water. In addition, because costs reflect the district ratio of sprinkler and flood irrigation used, district average application rates, and well depth (rather than the depth water is being pumped), costs may not be anywhere near those actually experienced on the property.

Irrigation costs are estimated using Kansas State University Farm Management Guides. Although it is always possible to dispute individual numbers in the cost estimates, they are probably better than any other source available. Also, as long as costs vary correctly with respect to well depth and application rate, they will provide consistent results. Figure 2 is a

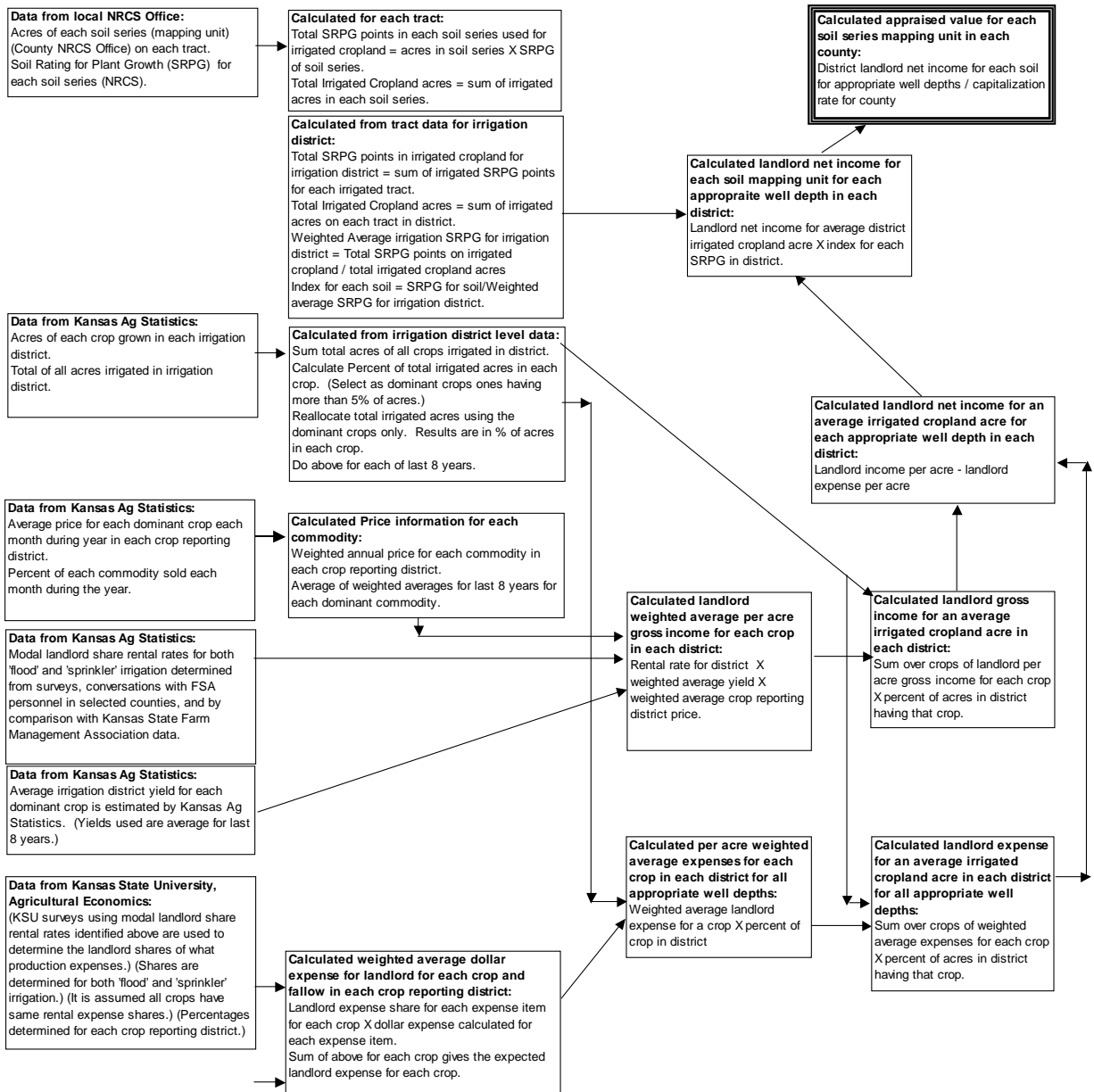


Figure 2. Irrigated Cropland Valuation Process in Kansas

schematic of the calculation procedures involved for determining irrigation land values. Figure 3 shows the process of estimating irrigation costs.

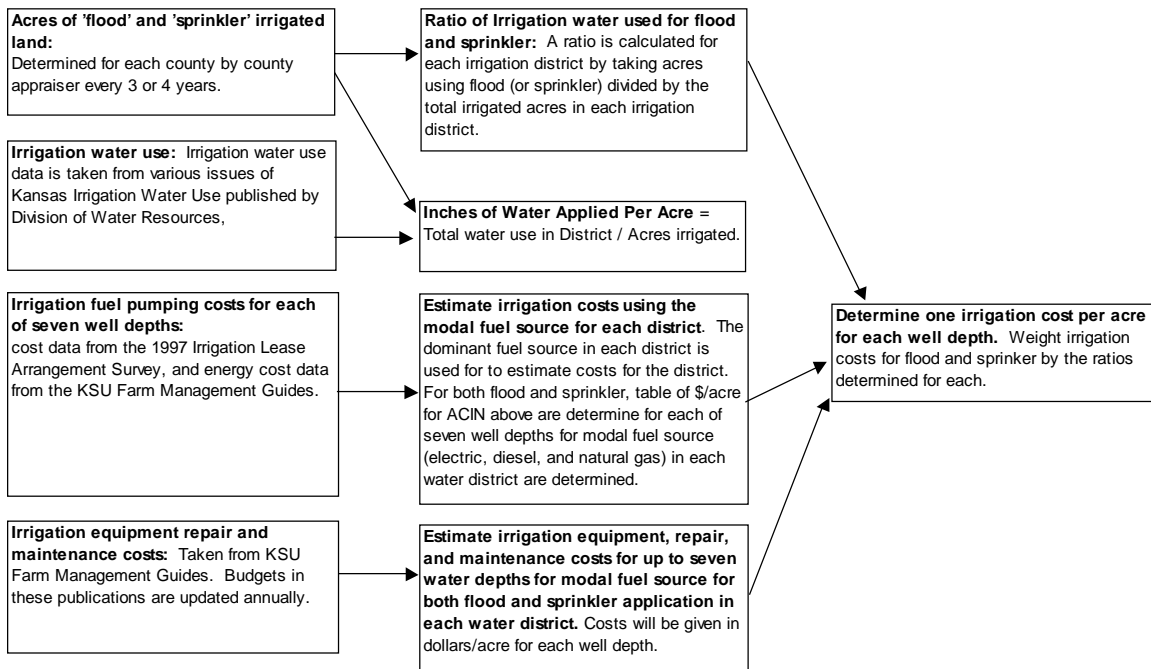


Figure 3. Irrigation Cost Estimation Process in Kansas

Range and Pasture

Rather than using the SRPG index for valuing range and pasture, the estimated carrying capacity in Animal Unit Month (AUMs) per acre is used. The number of months a full size cow and her calf can beneficially use the grass on one acre is the carrying capacity. If the carrying capacity is .5, then 24 acres will be required to support one cow and her calf for a year. If the carrying capacity is 2, then 6 acres will be required per cow per year. Each soil-mapping unit is assigned a carrying capacity within a crop-reporting district. Where appropriate, different carrying capacities are assigned to tame pasture and native pasture.

The relative productive capability of different soils is taken into account using an index developed by personnel in the Department of Agronomy, Kansas State University, and USDA-NRCS. The index reflects the usable forage production capability of each soil-mapping unit relative to the average productivity in each county. After the average carrying

capacity is specified for a county, multiplying the county average by the set of relative indices for all soil-mapping units yields estimates of the carrying capacity for each soil-mapping unit in the county.

Because cash rental is the dominant method of renting pasture, cash rentals are used to estimate net income per acre. Kansas Agricultural Statistics conducts surveys to determine prevailing rental rates in the various crop-reporting districts. In addition, surveys are used to collect expected landlord expense information in each district.

After gross returns and expenses are estimated for each soil-mapping unit in each district, the net income is determined for each unit. Each year the Kansas State University Department of Agricultural Economics reports to the Division of Property Valuation the expected pasture (range and tame) net returns to each soil-mapping unit in each crop-reporting district.

The Division of Property Valuation converts the net income per acre into a use value for each soil-mapping unit in each county by dividing the unit's net income by the appropriate capitalization rate for that county. The use value is always determined by capitalizing the average of the per acre income for the past eight years. Figure 4 is a schematic of the process for estimating the appraised value of range and pasture.

Summary of the Use Valuation Estimation Process in Kansas

Overall, the value estimation process that is being done in Kansas is a meticulous, time-consuming effort that does an excellent job of determining the relative value of agricultural properties. There is no other state that determines land values with as much precision as Kansas. Property owners concerned that their taxes are being estimated correctly relative to those of their neighbors should have considerable confidence in the Kansas system.

It is laudable to have a system that gives the best results. However, a secondary concern might be: "At what cost can the state afford to have those results?" Although this report does not address the cost of obtaining the information in Kansas or any other state, if taxes are relatively low, then the state should not spend a lot of time estimating the amount of tax. However, if the tax burden is relatively high, then it may be appropriate to spend more tax dollars to estimate values more precisely. The portion of the report focuses on recommendations of improving the current system.

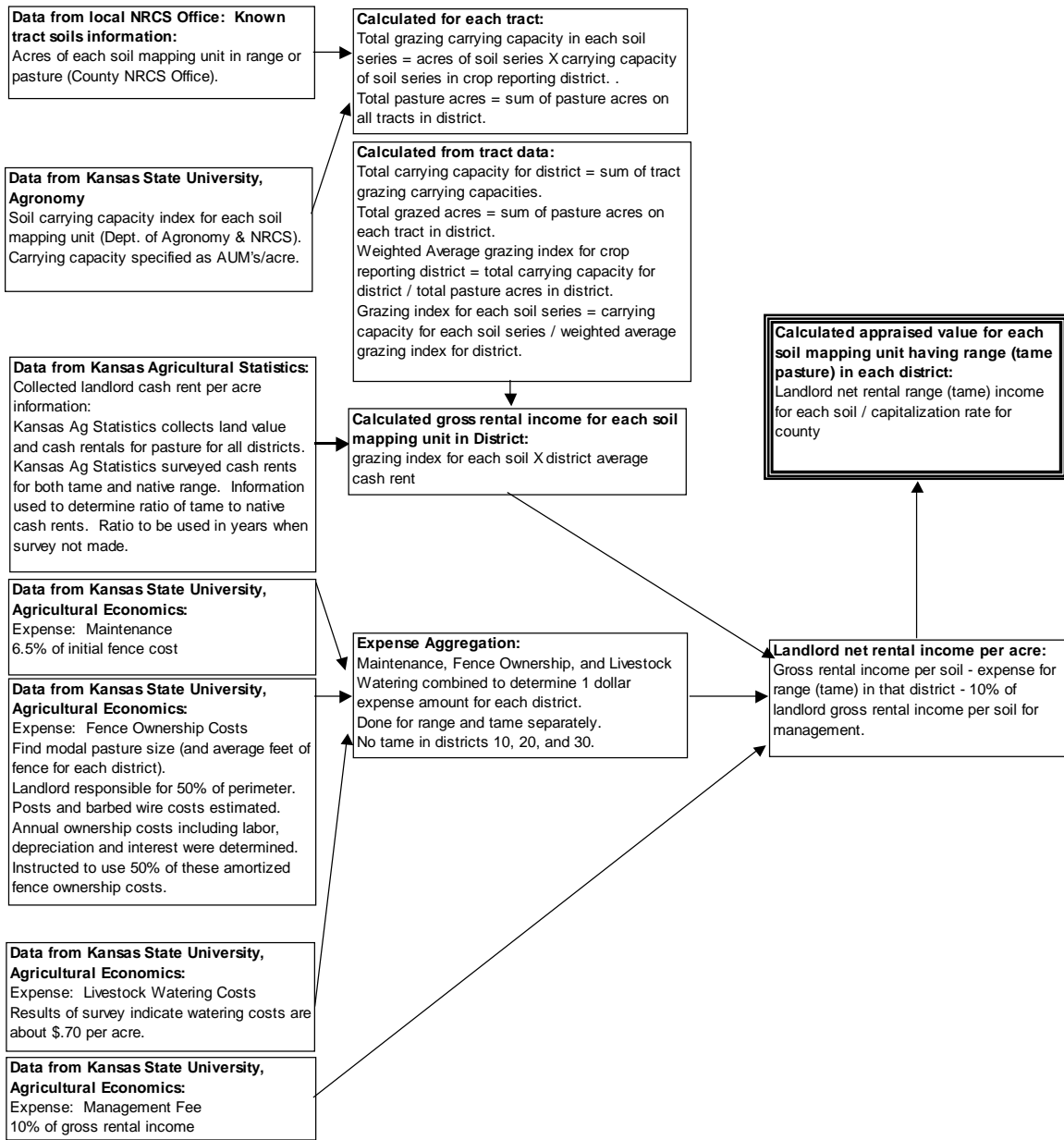


Figure 4. Pasture and Range Valuation Process in Kansas

Use Value in Other States

The thirty states that were reviewed approach use value differently. For some states, the primary motivation is keeping prime agricultural land in production. For other states, the goal is to reduce the tax burden on agricultural producers because their primary resource, land, is priced completely out of proportion relative to expected agriculture income. Depending on the relative importance of these objectives, the use value taxation procedures in the thirty states vary significantly.

Some states provide counties with required values and others simply provide general guidelines and let the county appraiser estimate use value using the guidelines. Although every state has different procedures, there are certain characteristics of the approaches that can be summarized. The first characteristic is eligibility requirements for those states in which landowners must apply to obtain use value taxation. The second characteristic is the procedure for recovering tax savings when land no longer qualifies for use value. The third characteristic is the method states use to determine the capitalization rate used to estimate value.

Landowner Application for Use Value Taxation

Table 1 gives a brief review of procedures in those of the thirty states where landowners are required to apply for use value taxation. About two-thirds require that landowners apply to receive use value taxation. Some states require that application to be completed every year, while others require that applications be completed every three, four, or five years. In about one-third of the states, use value is automatic for tracts greater than a certain size.

In some states certain requirements are necessary for land to be eligible for use value taxation. For example, in Oregon tracts that are not already zoned as agricultural must demonstrate a \$600 gross agricultural income if six acres or less, \$100 per acre of gross income if between six and thirty acres, or gross income of \$3,000 or more if thirty acres. In New Jersey, the state checks every third year to see if the tract is still eligible for use valuation.

Arizona uses the application process to obtain information for valuing agricultural properties. Landowners must annually apply for use valuation and if the property is leased,

landowners must provide lease information and conditions. In this way appraisers obtain information that will help them place use values on properties throughout the county.

Table 1. States Requiring Landowners to Apply for Use Value

Alabama	Owner must apply.
Arizona	Must file every five years.
Connecticut	Owner must apply.
Delaware	Owner must apply.
Florida	Must apply each year. County commissioners can revoke if they deem agricultural use for a tract to be not in best interest of county.
Louisiana	Must apply every four years.
Maine	Must file a statement of gross income for each of last five years every five years.
Massachusetts	Must apply and then indicate each year the desire to continue using use value. A lien will be placed on the land for taxes not paid.
Michigan	Owner must complete affidavit.
Minnesota	Landowners must apply.
Mississippi	Must apply each year.
Nebraska	Owner must apply.
New Jersey	Must have been in agricultural use for more than two years. State checks tract every third year to insure eligibility.
New Mexico	Owner must demonstrate eligibility, but does not need to reapply each year.
Oregon	Agricultural land in agricultural land use zone is eligible. Land not in zone can apply for use valuation. Must have \$650 gross income if six acres or less. If between six and thirty acres, must gross \$100 per acre. If greater than thirty acres, must gross greater than or equal to \$3,000.
Texas	Owner must apply.
Utah	Owner must apply.
West Virginia	Owner must apply each year and have agricultural gross income greater than \$1,000.

Tax Recapture When Land Is No Longer Eligible for Use Value Valuation

As discussed earlier, an objective of some states is to keep land in agricultural production. To accomplish this, a penalty is assessed when land is converted from use value-eligible agricultural uses to other uses. In some cases, this penalty is a percentage of the sale price; in most, it is a recapture of the tax savings the landowner received. In Massachusetts, cities have the right to purchase any tract being removed from use valuation.

About one-third of the states require that landowners pay a penalty when land becomes ineligible for use valuation. In most of these states, the penalty is equal to the landowner's tax savings in the past two to ten years. When penalties are determined in this way, it is necessary that there be an estimate of market value before the penalty tax can be calculated.

Table 2 provides a list of the penalties imposed by the various states for converting land from agricultural to non-agricultural use. Not all states have penalties for converting agricultural land to a non-qualifying use.

Capitalization Rate Selection

About two-thirds of the thirty states stipulate that use values are to be determined by capitalizing net income. Most of these states rely on the Farm Credit Services (FCS) rate of interest as a principal component of the capitalization rate. Some states use a straight five-year average of the FCS rate of interest; others use the FCS rate along with other components. This section of the report shows how the various states choose a capitalization rate.

Iowa specifies that 7 percent will be the capitalization rate; other states build a capitalization rate by aggregating risk components, liquidity adjustments, safe rates, effective tax rate adjustments, and other components. All of the states vary in their procedures for selecting a rate unless the rate is specified as a five-year average FCS rate.

Table 3 shows how the various states choose a capitalization rate. The diversity in procedures is disturbing from the standpoint of estimating use value. The diversity is not

Table 2. Penalty Taxes for Converting Land Receiving Use Value to a Non-qualifying Use

Alabama	If converted in first year of use valuation, 10 percent of tax savings recovered, 9 percent in second year, 8 percent in third year, and so on.
Delaware	Difference between market value and use value taxes recovered for the past five years.
Maine	Land that becomes ineligible for use value taxed at 20 percent of fair market value if less than five years in use valuations. If greater than five years in use valuation, tax difference for past five years is recovered.
Maryland	Penalty is an Ag Transfer Tax of 5 percent of sale price for sale of tracts having use valuation.
Massachusetts	Five years of market value taxes recovered. Also, cities have right to purchase any tract being removed from use valuation. (Alternative tax is 10 percent of market value if sold in first year of use valuation, 9 percent in second year of use valuation, and so on.)
Minnesota	Three years' of difference between market value taxes and use value taxes.
Nebraska	Three years' of tax savings recovered if property is no longer eligible.
New Jersey	Two years of roll back taxes. This recovers the past two years of use value tax savings.
Oregon	Up to ten years of use value tax savings are recovered.
Texas	Three to five years of tax savings are recovered, plus interest.
Wisconsin	The difference between market value taxes and use value taxes for the past two years are recovered.

disturbing from the standpoint of tax estimation. As long as the capitalization rate is stable, appropriate assessment ratios are applied, and tax percentages are reasonable, tax estimates can be fairly and equitably determined.

Because of the wide range in capitalization rates applied, the estimate of use value for a tract having a given net income in one state can be quite different from its estimated use value in another state. For example, an acre having a net income of \$50 will have a use value of \$714 using a 7 percent capitalization rate, and a value of \$417 using a 12 percent

capitalization rate. However, taxes at 1.5 percent of assessed value would be the same per acre (\$1.56) if the assessment ratio associated with the 7 percent capitalization rate is 14.6 percent and the assessment ratio associated with the 12 percent capitalization rate is 25 percent. Again, within any given state, the particular capitalization rate chosen is not as important as having the capitalization rate remain stable over a period of time, and selecting appropriate assessment ratios.

Alternative Approaches to Use Value Estimation

As discussed above, most states capitalize net income to determine use value. However, every state is different in its method of determining net income.. Some states estimate the net income for an aggregate average acre in each county. The five-year average county yield is multiplied by the five-year average price to determine county gross income. Expenses are subtracted from gross income, and the resulting net income is divided by the number of acres in the county to obtain the county average net income per acre. The average net income per acre is divided by the capitalization rate to obtain the average value of an acre in the county. In many cases productivity indices are used to prescribe use values for soils differing from the average.

Other states specify that, cash rental data, share rental data, or owner-operator net income estimates for a particular soil capability class are capitalized to estimate use value. The inherent basic assumption is that all the land in one class should be valued the same for tax purposes even though there may be soils having different productive capabilities. Further, some states provide one value for each capability class for the entire state, others for each geographic region, and others for each county. Using this approach reduces the number of land value estimates that must be made. The concern is that soils having substantially differing productive capabilities might be assigned the same use value per acre.

Table 3. Capitalization Rate Determination in States Capitalizing Net Income to Determine Use Value

Arizona	FLB rate + 1.5 percent
Illinois	5-year average FLB rate.
Iowa	7 percent
Louisiana	Currently, 2.33 percent for risk + .16 percent for non-liquidity + 6.45 percent safe rate. If calculated value less than 12 percent, use 12 percent.
Maryland	For July 1999: 9 percent interest – 2 percent for inflation + 5 percent for capital market imperfection + 1 percent effective tax rate = 13 percent.
Massachusetts	Cap rate is average of the past 60 months of FLB rate.
Mississippi	Rate is built, but if calculated rate is less than 10 percent, use 10 percent.
New Mexico	Cap rate is set for five years at a time. FLB and PCA rates are used when determining rate.
North Dakota	Cap rate is average of twelve years of St. Paul FLB rate. Highest and lowest value not used.
Oklahoma	Rate is calculated as 65 percent of five year average FLB rate + 17.5 percent of five year average second mortgage rate + 17.5 percent of five year average CD rate + county effective tax rate.
Oregon	Cap rate is five year average FLB rate + effective tax rate.
Texas	Cap rate is greater of 10 percent or FLB rate + 2.5 percent.
Utah	Cap rate if five year average FLB rate.
West Virginia	Cap rate is safe rate + risk adjustment + non-liquidity adjustment + management rate + statewide effective tax rate.
South Carolina	Rate is FLB rate + effective local tax rate + risk adjustment of 15 percent + .3 percent for non-liquidity.
Wisconsin	Cap rate is municipal tax rate for five year average loan rate.
Wyoming	Cap rate is five year average of Omaha FLB rate.

States Providing Tax Relief to Agricultural Landowners without Implementing Use Value

At least two of the thirty states use agricultural zoning to keep lands in agricultural production and at the same time keep land values from rising to levels that might force agricultural landowners to quit farming or ranching. Oregon and California attempt to implement strong enough zoning practices that will keep agriculturally zoned land in production. Where this is accomplished, it is expected that agricultural lands will be priced for their agricultural income production capability. The expectation is that market value based taxes will be equivalent to use value taxes; therefore, having a separate approach for valuing agricultural properties is unnecessary.

Michigan does not have use value for agricultural land. However, agricultural lands are not assessed taxes for local school uses. This approach accomplishes much the same result as use valuation but eliminates the need for use value taxation procedures.

Minnesota approaches use valuation by specifying that remote parcels be used to determine the value on which agricultural properties will be taxed. The general idea behind this approach is that remote parcels will not be subject to the non-agricultural price pressures of land near urban centers. The difficulty with this approach is that there is a demand for remote parcels by buyers for recreation and rural home sites. In 1999 there was a farm assistance program in Minnesota in which agricultural producers holding an FSA contract were given up to \$4 per acre.

Although Florida does have use value taxation, the state has a procedure for determining when agricultural use value is no longer appropriate for a particular tract. When the sale price of a tract is greater than or equal to three times the use value of the tract, the tract is no longer considered agricultural land.

The state of Nebraska specifies use value to be 80 percent of market value. Normal procedures are used to determine market value. In North Dakota, gross returns per acre are capitalized into value for cropland.

Summary of Valuation Procedures

Use value tax estimation procedures have been reviewed for thirty states. Every state uses a different methodology. In the simplest approach, a state committee establishes a statewide use value for each of the VIII soil capability classes. Use value for a tract is the sum of the number of acres in each capability class times the statewide value of that capability class.

The most complex system is that of Kansas where the acre net income is estimated for each soil-mapping unit (soil series) in each county of the state for each of several possible uses. The value of an acre of a soil-mapping unit is determined by capitalizing the expected net income using a capitalization rate equivalent to the rate of interest charged by FCS and adjusted by the county property tax rate.

Use Value Issues and Concerns in Kansas

In discussing the current procedures and practices employed by Kansas in placing use value on agricultural properties, several independent issues have been raised. In this portion of the report, those issues are addressed. To the extent possible, both sides of each concern will be presented.

Issue 1: Should government payments be included when calculating the net income that is capitalized to determine Use Value?

There is no absolute correct answer on whether or not government payments should be included. Some of the reasons payments should be included are the following:

- The correct relative net incomes would be estimated for those receiving government payments and those not receiving government payments.
- Tax receipts from agricultural properties would increase.
- Some other states do include government payments in their methodologies for determining the use value for agricultural properties.

There are also several reasons why including government payments when calculating net income would cause difficulties:

- Government payments are not stable. Currently, regular payments are scheduled to terminate in several years. No one really expects that to happen, but the amount of future payments is very uncertain. Because of the uncertainty, tax revenues from agriculture based on government payments would not be dependable.
- Currently, a substantial portion of the government payment is associated with disaster payments. It would be difficult to support increasing tax revenues on agricultural properties received by farmers because of bad weather or low prices.
- Most government payments are subject to income tax. It might be argued that including government payments in the calculation process amounts to double taxation. It is expected that normal, consistent payments are capitalized into market values for agricultural properties.
- The distribution of government payments is not uniform across land in a particular use. Therefore, to be fair to those landowners not receiving government payments, use values would need to be determined individually for each tract. This would place a greater burden on county appraisers to collect and store data and determine appraised values individually for each tract.

In summary, government payments should not be taxed as part of the property tax system. If the payments were included and if, over time, government payments declined or were eliminated, there would be a tendency to raise taxes on agricultural land and other taxed property to keep tax income at a level to support existing government services. There is merit to the argument that including payment receipts when determining net income would lead to more fair taxes between those who do and do not receive government payments. However, because not all landowners owning dry cropland receive government payments, it would be difficult to fairly determine differing use values for those who do and do not receive government payments.

Issue 2: Should FSA yields be used rather than county averages based on agricultural statistics?

On the surface, using established yields for individual tracts when determining gross income seems to have a lot of merit. However, the implementation difficulties completely outweigh the possibility of increased fairness that would result from using FSA established yields. If individual yields were to be used, each tract would necessarily be valued separately

based on its expected yield. Although this seems fair, property taxes ought to be based on the resource owned, not the expected management skills of the operator. FSA yields reflect the management capability of the farm operator as much as they reflect the productivity of the soil being farmed. Better managers having higher net incomes will pay higher income taxes; they should not necessarily also pay higher property taxes.

Currently, county appraisers are provided with the use value they will place on each soil-mapping unit. If the FSA yields were used, the expected net income and thus the use value would change for each soil-mapping unit. Although the computations are possible, county appraisers would have to maintain a yield file for each farm, adjust state-provided net incomes, and then capitalize the resulting net income to estimate use value. This would be more difficult for irrigated tracts, where in addition to keeping track of yields, it would be necessary to adjust the net income for expenses associated with differing well depths on each individual tract. The number of adjustments involved might lead to embarrassing errors on some tracts.

Because county, irrigation district, and, in some cases, crop reporting district averages are being used for estimating costs, there seems to be relatively little justification for tying one component, yields, to actual tract history. Because FSA-established yields are long-term averages, there would be minimal decreases in yield in any particular year because of a hailstorm or other disasters. The goal of the property valuation procedure currently in place is to base taxes on the resource base of the landowner, not actual net income in any particular year.

Issue 3: Has too much of the authority to set property values been taken from county appraisers?

The current process for estimating use values is controlled by the state. County appraisers have little authority to change values for extenuating circumstances. County appraisers can petition to the Division of Property Valuation for special circumstances with documentation. As a result, county appraisers cannot arbitrarily change the value of any particular individual tract. The justification for taking control from county appraisers is equity among counties. When property taxes were used solely to support the services existing in a particular county and the county received little or no support from the state, the county appraiser could be given latitude to adjust values within a county because of the presumption

that the appraiser would treat all properties in the county equitably. However, when state support is used for county services, most believe that taxes should be equitable across counties. It is difficult for county appraisers to all make adjustments exactly the same, no matter how good their efforts toward that end.

The Division of Property Valuation has recognized that there are appropriate value adjustments that should be made on individual tracts. What they have tried to do is set up guidelines for the adverse influence adjustments that can be made to cause land to have a different use value from that prescribed by the state for that particular soil-mapping unit. For the sake of uniformity, specific adjustment features have been set up for canopy cover, salinity, alkalinity, and flooding. For these specific factors the county appraiser can make an adjustment in use value as long as the guidelines are followed.

Some soils have, as part of their description, some amount of salinity or alkalinity. Where this is the case, care should be taken not to also adjust these soils using the adverse influence adjustments as this would result in a double adjustment for the salinity or alkalinity.

Another concern is that many acres do not contribute to agricultural income directly. Whether these acres are wasteland, having little or no agricultural value, or are agricultural acres necessary to operate the farm will continue to be a controversy. The Division of Property Valuation has issued guidelines for wasteland and has set an arbitrary \$10.00 per acre use value on these properties. These guidelines need to be uniformly enforced across the state. As long as there is uniformity in use of these guidelines, equity within and across counties will continue, which is perhaps more important than the actual tax adjustments being made to agricultural properties.

There appear to be procedures in place for handling diverging opinions about the relative productive capability of soils. County appraisers need to be willing to document and justify their proposed adjustments to soil values. The Division of Property Valuation should accept or reject the documented adjustments based on the merits of the justification. So long as county appraisers and personnel in the Division of Property Valuation are willing to cooperate and both have as their goal the equitable valuation of property both within a county and between counties, the 'best' appraised value should result for each tract.

Issue 4: Are procedures for estimating livestock carrying capacities appropriate?

Many landowners have had concerns about estimated carrying capacities. In reality, tracts on similar soils right across the road from each other can have substantially differing actual carrying capacities. Most of the differences are likely to be the result of past management practices. If a tract has been overgrazed, the tract probably will sell for less than a tract that has been appropriately grazed. Had both tracts been under the same management level, the grass production would have been about the same. The question that arises from this situation is: "Should producers who overgraze their land to obtain more current income be permitted to have lower taxes for a considerable time into the future because their management practices have caused their land to have a lower value?" Because Kansas has opted to define grazing capacity based on the soil-mapping unit, use values will be estimated assuming all land having the same soil-mapping unit is managed the same. The established procedures estimate carrying capacity using a conservative typical management assumption.

Taxing all grazing land assuming typical management is appropriate because the individual who abuses his land by overgrazing is not rewarded with lower taxes. Land normally will not return to its full or typical capability as soon as soon as the operator stops the overgrazing. It may take a number of years for the property to again attain its typical productive capability. About the only individual who has a legitimate concern about taxation being based on typical management is the one who buys abused land where taxes are determined using typical rather than actual productivity. As a result, rational buyers of overgrazed land should be willing to pay less than what abused land normally sells for so that a higher percentage of the income produced by the abused land can go to pay taxes.

Procedures used for assigning values to grazing land are similar to those for dry and irrigated cropland. Because those estimating per acre net incomes are familiar with these procedures, it is appropriate to continue the procedures for grazing land. Although explaining the procedure to taxpayers may prove difficult, most taxpayers understand the surveyed average cash rental rate per acre, the assumption of typical management, and standard management practices.

Established procedures are used to identify the typical carrying capacity for the district. It should be possible to use this information to inform concerned taxpayers that the productive capability of the soils they have in their pastures is some percentage better or

worse than the typical pasture in their district. However, those landowners possessing overgrazed properties may not wish to believe this information. If a political decision is made that the current condition of pastures should be considered, it may be possible to develop an adverse influence table similar to that used for canopy adjustments.

Another issue regarding pasture and range is the allocation of crop reporting district averages among the counties in each district. Cash rental rates are determined for crop-reporting districts. Because the range production indices are estimated for each county and the average carrying capacity for a county should decline as rainfall declines, there should be a decline in carrying capacities within the crop reporting districts as the average rainfall decreases.

Issue 5: Should the same capitalization rate be used for cash rents and share rents?

Risk should be one of the most important factors considered when specifying a capitalization rate. The reason government bonds yield 6 percent and the long-term stock market averages 11 or 12 percent is the relative risk that investors see in the two investments. If the risk associated with the two investments were the same, the rates of return would be the same. What rate of return should agricultural land return given the inherent risky nature of agriculture? An investor considering the purchase of a farm that is to be rented to a farm operator for cash rent is facing less risk than an investor who rents the land to a farm operator using a share rental arrangement. Normally, cash rentals yield the owner somewhat less net income per acre than do share rental arrangements. When owners share rent with tenants, they assume some of the risk accepted solely by the tenant in a cash rental. Using this theoretical framework, there is a basis for saying land rented using a cash rental arrangement should be valued using a lower capitalization rate than land rented using a share rental arrangement. If land rented with a cash rental arrangement were valued using a slightly lower capitalization rate, the use value would be slightly higher than the same land valued using a share rental arrangement.

Because current statute, procedures use a constant capitalization rate for capitalizing net income for all agricultural land in a county, it can be argued that range and pastureland is valued slightly below its actual use value relative to cropland. Having noted this and the considerable imprecision in estimating net incomes, there is little argument for having a lower capitalization rate for cash rented pasture than for share rented cropland.

Issues and Concerns as Reflected by County Appraisers

In addition to those duties associated with collecting and processing information on soils, prices, and productivity, county appraisers play an important role in the practical implementation of the use value determination. To obtain an overview of the current procedures as viewed by taxpayers and county appraisers, a few randomly chosen appraisers from different parts of Kansas were interviewed. Their viewpoints are not identical, and they do not necessarily reflect those of all county appraisers in Kansas. Rather, they present consensus thoughts and some individual concerns.

Consensus Thoughts

Consensus Thought 1: The taxpayer does not understand the current system.

Appraisers generally feel that if they can adequately explain the rationale and methodology, then most taxpayers are unlikely to appeal. Because determining use value is complex, the easiest way of explaining the process to taxpayers is: "You have X kind of soil and the Division of Property Revenue told me to give it this value." None of the appraisers indicated this is how they explained the process, but it would seem a good way to 'pass the buck'. What appraisers did say was that a general education program for taxpayers is needed. The opinion was voiced that the Cooperative Extension Service was best equipped to undertake this challenge.

Under a prior system, county appraisers were responsible for making some of the adverse influence adjustments that are now built-in to values based on the soil-mapping unit. This can be difficult for some to understand without substantial explanation.

Consensus Thought 2: The current system is too rigid, with county appraisers having little authority to make adjustments.

The goal of the current system is to maintain equitable adjustments among counties; if individual appraisers are given too much authority to adjust for adverse influences, equity will be lost. Thus, a set of standard adjustments is made available to all appraisers in the state. Although the appraisers believe that they should have more authority to make adjustments, they also believe the current set of adjustment factors is not appropriate for the entire state. Some appraisers make adjustments using the guidelines; others indicate that although they need to make adjustments, none of the standard adjustment guidelines are appropriate for their county. County appraisers should petition to the Division of Property Valuation for special circumstances and provide documentation.

Conceding that it was possible that some county appraisers were inappropriately applying adverse influence adjustments under the previous system, most indicated that they did not feel this was a major problem and that there was a mechanism for dealing with values in those counties where the process was being abused. So that appraisers could take into account diverse circumstances, it was suggested that appraisers be free to make adjustments, but be required to justify and submit a list of the adjustments they have made. The Division

of Property Valuation would be responsible for examining the list and either accepting or rejecting the county appraiser adjustments.

Consensus Thought 3: The direction of change in use values resulting from using a rolling eight year average net income and an eight year average capitalization rate can cause problems when land values go up in a year when prices and/or yields have decreased.

Again, it is difficult for taxpayers to understand how this situation can occur. As discussed elsewhere, a fixed capitalization rate would at least partially address this problem. However it is difficult to resolve the problem because the most recent data for estimating net income is two years old, and the average net income being dropped is eight years old. These concerns can probably be addressed with an education program that makes landowners aware they can anticipate the decline in use values in a few years, mirroring the decline of this year's prices and or yields.

Individual Concerns

Following are more specific concerns raised by individual appraisers. Because the number of appraisers polled was small, some of these concerns might almost be consensus concerns or they might be concerns of only one appraiser.

Individual Concern 1: Some values are off base.

In one case, an older soil survey identifies the bed of a river as productive soils. They might have been productive at some point in the past, but the riverbed is currently wasteland. County appraisers should have the flexibility to adjust for this difficulty. It seems that this might be a situation where documenting and justifying the land to be wasteland would be appropriate.

Individual Concern 2: Some soils that are relatively unproductive for use as dry cropland might be very productive when irrigated.

This problem might be addressed by using the SRPG values calculated using little or no water stress.

Individual Concern 3: For those counties where there are protected levies, there will be some land that cannot be used productively.

Even though the soil-mapping unit may indicate a productive use and use value, the location indicates the land is likely to be waste as far as use value is concerned.

Individual Concern 4: Some values appear to be way off base.

Another illustration was given in which the use value of pasture is higher than cropland. This occurs on somewhat regular basis. Also, land that is primarily sand has very low dry land productivity in western Kansas, although when irrigated, it becomes some of the most productive irrigated land. Using the 'water stress adjusted SRPG' values discussed elsewhere might take care of this problem.

Individual Concern 5: Government payments should be included in net income.

This should occur, according to the appraiser, because so much of farm income comes from government programs that to exclude government payments gives unrealistically low use values.

Individual Concern 6: County appraisers should be able to adjust for observable value differences based on differing rents.

There are areas where it is impossible to provide livestock with water at a reasonable price, particularly when it is impossible to find water for a well. In these cases, the only alternative may be to haul water. As a result, rents are reduced and use value should be reduced as well. If there is a difference in rental rates observable because of factors directly affecting the net income expected such a factor as water availability, county appraisers should be able to adjust the use value applied to that property. One possible approach is to adjust the appraised value in the same proportion that the rental rate is reduced. Any adjustment of this nature would have to be supported by documented rental rates for tracts with and without water.

Individual Concern 7: There should be a recovery of tax savings accrued to landowners benefiting from use value if the use of the land is changed from agricultural to some other use.

Many states have this as a provision in their use value legislation. The thought is that landowners only superficially using their land for agricultural purposes would ultimately have to pay the difference between use and market value taxes for a specified number of years. An example might be a situation in which land is held for anticipated commercial, residential, or industrial development. As long as the tract is hayed or grazed, it can be identified as agricultural even though the purpose of owning the tract is for development.

Individual Concern 8: Expected expenditures for irrigated land should be based on feet water is lifted rather than depth of well.

The best depth to use would be some combination of well depth, static water level, and amount of draw down. This was mentioned by one appraiser and is discussed elsewhere in this report.

Summary of Interviews with a Small Group of County Appraisers

Interviews with five county appraisers resulted in the points raised above. Three points have been identified where there was somewhat of a consensus among the appraisers. An additional eight points were made by one or more of the appraisers. Interviewing more appraisers would have led to more consensus points, but would certainly have added numerous additional concerns as well.

Most county appraisers indicated that the number of appeals is decreasing as taxpayers become more familiar with the system. In addition, if there was an organized taxpayer education program, most appraisers feel there would be fewer problems still with current methods. County appraisers feel they need to be able to address difficulties and inconsistencies as expressed in several of the individual concerns above. The appraisers interviewed did not indicate that they would object to having their decisions reviewed by the Division of Property Valuation. Although the appraisers indicated that they believed current procedures did a pretty good job of establishing and maintaining equity among the various counties, they also felt they should have the authority to adjust for inconsistencies, inappropriate values, and unique circumstances that cause land to have use values different from those specified by the Division of Property Valuation.

Recommendations

Recommendation 1

- ♦ The statewide capitalization rate should be fixed at the current rate. Rates applied in each county should continue to be adjusted by the local tax rate.

Current Situation

The statewide capitalization rate uses a five-year average of the FCS agricultural land loan rate as its base. To this average rate a .75 percent statutorily specified amount is added. Further, the director of the Division of Property Valuation has the authority to add up to 2 percent additional to determine the statewide capitalization rate. In recent years, the full 2 percent has been added, and the director has requested (or may have been given) authority to add more than 2 percent to the calculated rate.

When determining value (whether it be market value or use value) using an income capitalization procedure, it is necessary to specify a capitalization rate. When determining market value, most states use a capitalization rate that is a blend of the mortgage rate of interest and the desired rate of return on equity. Following is an example of how a capitalization rate might be determined.

Suppose that the current mortgage rate is 7 percent, and the desired landowner equity rate is 13 percent. Further, suppose that a landowner has borrowed 25 percent of his asset value. An overall capitalization rate can be computed by adding together the mortgage rate times the percentage of investment and the equity rate times the percentage owned. In this case the overall capitalization rate is 11.5 percent.

	Rate	Percent of Investment	Adjusted Rate
Mortgage Rate	7%	25%	1.75%
Equity Rate Desired	13%	75%	<u>9.75%</u>
Overall Capitalization Rate			11.50%

A use value determined using a capitalization rate of 11.5 percent would indicate the owner would have sufficient income to pay 7 percent interest on 25 percent of the asset value borrowed and to receive 13 percent rate of return on the owner's 75 percent equity.

This procedure for determining an overall capitalization rate works well for determining what a prudent investor should pay for an asset (divide the net income of the investment by the overall capitalization rate), but direct application for determining use value requires some modifications. First, current procedures use a mortgage interest rate as the primary rate for determining the complete value with only arbitrary adjustments. According to Census of Agriculture numbers, agricultural landowners borrow 25 percent or less of asset value. This means that the mortgage interest rate should only provide 25 percent or less of the overall capitalization rate. Further, there is no clear guidance on what equity rate of return farmers should expect to receive.

Finally, that elusive equity rate of return should be used to determine approximately 75 percent of the overall capitalization rate. Even if a "good" equity rate of return were available, there is still a possibility that a decrease in the mortgage rate could cause an increase in land values not supported by an increase in farm income.

Goal of Use Value Taxation

The goal of using use values is to have agricultural land taxed at a rate supported by the expected income stream for that property. Further, it is desirable that the dollar amount of taxes not vary substantially from year to year and that what changes there are should cause taxes to vary directly with the expected income stream from the property.

As long as the capitalization rate depends on the mortgage rate of interest, it is impossible to be certain that changes in use values will occur in the same direction as changes in farm income.

Desirable Results of Fixing the Capitalization Rate

If the capitalization rate were fixed at the current capitalization rate used by the Division of Property Valuation, 11.69 percent, (or any other desired rate), the following desirable results would occur:

- Use values would always vary directly with the average net income stream.
- It would be unnecessary for the director of the Division of Property Valuation to annually determine how much of the allowable adjustment to the capitalization rate should be used.
- It would never be necessary for the director of the Division of Property Valuation to request an increase in the allowable adjustment.
- It would be unnecessary for the Division of Property Valuation to spend time collecting information to set the capitalization rate.

The capitalization rate should continue to be increased by the amount of the county average tax rate on agricultural land. This adjustment causes land where taxes are relatively high to be valued at slightly lower values than where taxes are relatively low.

The end result of fixing the capitalization rate is that taxes would only increase (or decrease) if agricultural incomes increase (decrease) or if the tax rate were increased (decreased).

Recommendation 2

- ◆ In any year that a crop first occupies more than 5 percent of the acres, the net income should be recalculated for the current year using the revised mix of crops. The calculated net income for the current year should then be averaged with the previously calculated net incomes (calculated using the set of crops appropriate for those years). The resulting average net income should be the one capitalized into a use value.

Since making this recommendation, it has been stipulated that the above-recommended procedure is the one being used. Written guidelines specified for dry and irrigated cropland for 1997 indicate that when the mix of included crops changes, the new mix should be used to recalculate net income values for all prior years. Because the text describing the procedures is somewhat confusing, this recommendation is being made to insure that currently used procedures are followed in the future.

If the described procedures are followed, and all eight years of net incomes are changed, appraised values could change, perhaps substantially. Although the described procedure was probably desirable when the net income series was first established, the stated

procedure can potentially lead to a big shift in land values if used through time and the mix of crops changes one or more times.

The goal is to have a relatively stable average net income value, and there is no reason to recalculate prior year net income values if the mix of crops changes. If the new mix of crops continues for several years, the net income used to value the farm will gradually reflect the new mix of crops without an abrupt change in average net income. The above-described procedure is specified for both dry and irrigated cropland. This recommendation is included to prevent confusion for those who might be called upon to estimate net incomes in the future.

Recommendation 3

- ◆ Because well depth is not a good measure of how far water is being pumped, it is recommended that a measure more nearly reflecting the true lift be used.

Well depth is likely directly correlated with the vertical distance water is moved. However, when pumping costs are estimated using well depth, pumping costs are overestimated. Well depths are legally recorded at the time the well is dug and are available to county appraisers and others. In other words, they are a verifiable and consistent source of accurate information available without input from the landowner.

What is not reflected when using well depths, however, is that the water table is gradually receding. As this occurs, the pumping distance and pumping costs are increasing, net income is declining, and use value is expected to decline accordingly. Also, the depth of the water-bearing strata varies considerably within relatively short distances. Thus, reducing the value determined by estimating the cost of lifting water using well depth by an arbitrary percentage would not be satisfactory.

The currently used procedure causes the most difficulty where there are deep wells, but a relatively thick water layer results in pumping distances being relatively small. When this occurs, irrigation costs are significantly overestimated, perhaps to the point where the expected net income for irrigated land is less than for non-irrigated. Even if taxes are charged at a rate equal to that for dry cropland, the landowner using irrigation is not paying a fair share of taxes.

There are several ways of ameliorating the problem. Many states do not distinguish between dry and irrigated land for tax purposes. In these states, personal property tax is

generally charged on the irrigation equipment. Because Kansas does not have a personal property tax on agricultural equipment, this is not a feasible alternative.

Most states require that landowners apply to receive use value on their land. If this were done, landowners could be required to provide sufficient information so that a realistic measure of the pumping depth could be obtained. At the same time, information could be required on rental arrangements and terms. The difficulty is that county appraisers would be required to keep additional records regarding the applications.

A suggested recommendation is to estimate all irrigated land values assuming a relatively shallow well—for example, fifty feet. If the landowner did not report the required information, use values would be estimated using a pumping depth of fifty feet. If the landowner provided an affidavit or other information documenting the actual pumping depth, the use values would be figured using the correct pumping distance.

Using a procedure such as described above would more accurately identify use values than current procedures using well depth. A major consideration for implementation is the additional work required of the county appraiser to collect and store information. It is likely that slightly more taxes would be collected using the identified procedure because irrigated land would generally have slightly higher values. In any case, the values of irrigated land would be more equitable relative to dry cropland values.

Recommendation 4

- ♦ Irrigated soils should be assigned a SRPG value based on the assumption that the soils are irrigated and thus moisture stress will be reduced.

It is apparent that in Kansas the same SRPG index is used for both dry and irrigated land. Soil conservationists suggest it is possible to have a separate SRPG index for irrigated and dry soils. Basically, it is assumed that irrigation reduces or eliminates moisture stress. For many soils, irrigation eliminates much of the productivity difference among the soils.

The impact of using an irrigation-adjusted SRPG on irrigated soils may be to increase the value of soils that have a relatively low dry cropland SRPG rating. In effect, irrigation tends to equalize the productivity of soils.

Before implementing irrigation-adjusted SRPG values for irrigated soils, it would be best to obtain the irrigation-adjusted SRPG indices for a county or two to examine how much productivity values really change. If for most soils, the irrigation-adjusted SRPG is some constant multiple of the dry cropland SRPG for all soils, then using the SRPG for irrigation will have little or no impact on values.

Recommendation 5

- ♦ County appraisers should have the authority to make changes in property values used for individual soil-mapping units when the reasons are justified, documented, and approved.

Currently county appraisers have little or no authority to make changes in the use values associated with individual soil-mapping units. Appraisers can propose changes to the Division of Property Valuation. The operating assumption is that the value of the tract on which the change is proposed should be kept at its currently approved value until the change is approved. Appraisers should be given authority to make changes. However, each change should be justified in writing. In addition, if the value of a particular soil-mapping unit is changed because of inherent soil productivity, it should be changed for all instances of that soil-mapping unit. The exception to this would be if there are extenuating circumstances causing a soil-mapping unit on one particular tract to have a greater or lesser value than stipulated by the Division of Property Valuation. Generally, the reason stated for making the value adjustment should not be associated with the productivity of the soil.

If it is believed that the value of agricultural property is valued correctly relative to every other county, then county appraisers could be required to net out their adjustments. In other words, appraisers would be required to have a set of positive land value adjustments equal in value to the sum of negative land value adjustments. Such a procedure should minimize the number of adjustments made by appraisers and cause them to make adjustments only for situations in which they believe the recommended values are not acceptable.

Changes recommended by a county appraiser should be approved by some entity other than the Division of Property Valuation staff. For example, there might be an approval board for each crop-reporting district. The boards might include two or three county appraisers, an individual who is knowledgeable about the factors included in the soil SRPG index, and two or three others appointed by the Division of Property Valuation.

Recommendation 6

- ♦ Educational programs should be offered for property owners in Kansas to acquaint them with data sources, goals, computational procedures, and expected results of the current Use Value estimation system.

The current method used to estimate use values in Kansas is complex, using large amounts of data from several different sources to determine values. It is apparent that many property owners do not understand the current system. An educational program should be implemented to acquaint property owners with the current use value estimation system. Explaining the goals of the system, indicating what entities are involved in the calculations, and advising the means of addressing identifiable problems within the system could eliminate some of the mystery associated with the current system. The intent of the educational program should be to explain the system and inform the participants how the state—and thus they themselves—are better off because of current use value estimation procedures.

Summary and Conclusions

The Division of Property Valuation for Kansas uses a very detailed, comprehensive, and complex set of procedures to determine the use value of agricultural properties. Of the thirty states reviewed for this project, no other state goes to the effort of determining a fair and equitable net income for each soil-mapping unit in each county for each of three uses. With respect to the goal of having each agricultural property owner pay taxes equal to a percentage of the expected long-term average net income, no other state does better. The procedures are fair, understandable with a little effort, and have sufficient detail included to take into account all the productive characteristics of the multitude of soil-mapping units found throughout the state. Based on the goals articulated for use value in Kansas and the

thirty states included in the review, the current Kansas system is the best system in the United States.

In addition, the cost of collecting data, analyzing results, and estimating use values is most likely higher per dollar of taxes collected than that of most states. Kansas has a good system, but the state and its people are paying for it.

After spending considerable time evaluating the current system and comparing the system with that of other states, several recommendations have been presented that can improve the operation of the system relative to desired goals. One of the goals of use value estimation is that the use values are relatively stable over time. Most of the recommendations will improve the stability of use values and thus the stability of taxes. The change that will most improve stability is setting the capitalization rate. The rate might be fixed at the current or some other appropriate rate, but the very act of making the capitalization rate constant will insure that use values will rise and fall with average agricultural net incomes.

Two recommendations are directly concerned with irrigated land use values. First, the SRPG index can be adjusted for irrigation using the moisture stress variable in the SRPG equation. In effect, the moisture stress variable can be excluded causing the resulting SRPG value to be the productivity index if there is no moisture stress. The result of implementing this suggestion would be a better productivity index value for irrigated land. Sandy soils have severe moisture stress when farmed as dry cropland in western Kansas, but are very productive if that moisture stress is reduced using irrigation. Using the dry cropland SRPG values does not lead to this same result.

A second and perhaps more difficult to implement recommendation is that irrigation costs be based more on actual pumping depths than on well depth. Implementing this recommendation would be costly because pumping depths are not collected and stored as public information in the way that well depths are. The most practical way of obtaining the information would be to initially estimate pumping costs using a very shallow well. This would underestimate expenses and would overestimate net income, use values, and the resulting taxes. Landowners would be permitted to document their average pumping depths and have their irrigation expenses estimated for the documented depth. When property owners document their well pumping depths as greater than the default shallow well depth, the result would be a lower net income, lower use value, and thus lower taxes.

The current system is very detailed and is applied in a very rigid fashion. Adjustments can be made for standard adverse influences only. Because the uses of Kansas's soils vary widely, it is recommended that county appraisers be given more latitude in making adjustments. However, there should be controls and requirements for making adjustments. In addition, having them approved by an independent board knowledgeable of the factors included in calculating soil productivity and use should be required.

Finally, it is recommended that an effort be expended to educate agricultural property owners in Kansas about the data sources, the reason eight-year averages are used, and the goals of the use value taxation system in Kansas. Education concerning the goals and procedures of the current system should go a long way toward alleviating the concerns of Kansas's taxpayers. The Kansas Department of Revenue and the citizens of Kansas should be proud of the system currently in place even if none of the recommendations in this report are implemented.

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Appendix

Short Summaries of Rural Property Valuation Procedures In thirty States

Alabama

Uses Soil Survey to determine acres in each soil capability class (I through VIII).
Crop and Pasture valued the same
Timber valued at slightly less than crop and pasture.
Each class of cropland has same value throughout state.
Property owners apply for agricultural use value
Has class called 'Open Space Land' that is taxed at lower rate to preserve open space.

Designated by municipality.

Owner can apply to municipality for designation.

There is conveyance tax if owner of property sells within 10 years (agriculture, timber & open space). Tax is 10 percent of sale price in year 1, 9 percent year 2, etc.

Arizona

Agricultural land: use is primarily agricultural and has been in active agricultural use 7 of last 10 years prior to application,

There must be reasonable expectation of operating profit, and any non-contiguous parcels must be managed on a unitary basis with each parcel contributing.

There must be at least 20 ac. Permanent crops must comprise at least 10 gross acres, grazing land must be sufficient to carry 40 AU and number of animals must be economically feasible.

Small tracts are eligible with justification.

Agricultural Use value = cash rent / FLB rate + 1.5 percent (rate on long term loans)

Property owner must apply for agricultural use valuation. (Good for 5 years if no change in use, but must file each year indicating original application still correct.)

If a property is leased and agricultural use valuation desired, property owner must provide lease information and conditions of lease.

Lease information must be provided annually.

California

Does not have a Use value concept as used in other states.

State attempts to accomplish the same result by using agricultural zoning.

If everyone believes an agricultural use zone will not be changed, then market value and use value for the zoned tract will be the same.

If the possibility for changing the zoning appears, then land so impacted is considered a 'transitional property'. This procedure holds for everything except 'open space lands'.

'Open space lands' to be valued based on their income only.

Income from recreation, non-agricultural rental income, and mineral income should also be capitalized at rates applicable to the expected tenure of those streams.

Cap rate = sum of Rate for long term US government bonds + risk factor + property tax rate + component for amortization of any investment in perennials over their estimated economic life.

If there is likelihood that a dryland property will be irrigated, taxes on dryland will be gradually increased even though irrigation has not been implemented (market value of dryland is increasing, therefore taxes increase).

Connecticut

Factors to consider when evaluating application for use value: (not all are required)

Acreage under application

Portion of land in actual farming use

Productivity of the land

Gross Income

Nature and value of equipment used on the farm.

Extent to which the tracts comprising the land are contiguous.

Per acre values are set for state for seven land groups (separate values for river valley).

Owners must apply for use value.

There are use values for agricultural land and forestland.

There is no information provided on how state determines what use values should be.

Delaware

3-person committee (dean of college of agricultural and to governor appointees) specifies use values for various class of agricultural land annually.

Use values apply only to land (not buildings).

Those wanting special use value assessments must apply to county assessor.

Eligibility: own land, 10+ acres AND gross agricultural sales of at least \$1000 for last two years OR is clear evidence of anticipated gross sales of \$1000 within a 2-year period.

Owners receiving use value are subject to roll back tax.

Roll back tax requires paying what tax would have been at MV for last 5 years less what tax was paid for last 5 years.

Unclear what values are being used since calculations provided by capitalizing negative net incomes give negative values.

Florida

County appraisers classify land as agricultural or non-agricultural.

Property owner must provide return before Mar 1 each year

County commissioners can revoke agricultural use if they believed continued agricultural use of property is not in public interest.

Sale of ag-use land for more than 3 times use value indicates land no long agricultural land

There is considerable discussion of valuing forestland.

Pastureland is divided into four groups:

Range-raw unimproved: native pasture.

Semi-improved pasture: some improvement such as webbing, chopping or mowing which increases grazing capacity.

Improved pastureland: cleared, limed, drained and seeded to legumes of grass mixtures.

Waste-nonproductive land: (depleted mines, dumps, pits, lakes, ponds, and other non-productive land).

County assessor develops table of values for grazing land using rental rates, beef prices, expected expenses, etc.

It is recommended that assessor use owner-operator approach for cropland.

Illinois

Four uses: Cropland, Permanent Pasture, Other Farmland, and Wasteland

Cropland includes pasture that could be tilled without further improvement.

Permanent pasture includes pasture except woodland pasture and pasture included in cropland.

Other Farmland includes woodland pasture, woodland, timber tracts, and farm building lots other than home sites.

Waste not used in above uses is because of soil limitation and not as a result of management decision.

Land in right-of-ways is not taxed unless it is being used

Cap rate is 5-year average FLB rate

Agricultural Economic Value (AEV) = capitalized net income for each PI level

Equalized Assessed Value (EAV) = $AEV * 33 \frac{1}{3}$ percent

Permanent pasture AEV = 1/3 of cropland.

Other farmland and contributory wasteland AEV = 1/6 of cropland.

Remaining waste valued at 0.

Process for coming up with net income for each productivity point is not provided.

Iowa

Begins by determining landlord gross income and expenses for all acres in county.

Makes county difference adjustments in expenses and comes up with net income/acre after taxes

Capitalizes NI at constant 7 percent to find average value of land in the county.

Uses 5-year average of corn and soybean yields in each county

No information on whether all land in county given same value for tax purposes or if average for county is prorated based on productivity of soil.

Kentucky

- Requires that Fair Cash Value of each tract be determined even if eligible for use value.
- Use value currently determined for each crop-reporting district.
- Land is divided into number of units in each capability class.
- Using survey average cash rent for cropland in each district and average cash rent for pasture in each district, average cash rents determined for each capability class. These are used in the district.
- Market values determined for each tract using sales comparison.
- Ratios of value for class II as percent of class I, class III as percent of class I, etc. are used to work through comparable sales and come up with value of subject.
- If current market value \leq current use value, current market value can be used to value the property.

Louisiana

- Farmer must request use value taxation, application good for 4 years.
- First step is to determine a weighted average net income for an average cropland and horticultural acre in state.
- Cap rate is built from risk rate (2.33 percent) + non-liquidity rate (.16 percent) + safe rate (6.45 percent) = 8.94 percent
- Since rate less than 12 percent, 12 percent is used. (10 percent is statutory min for timber)
- Also determine net income for average acre of timber and marsh.
- Use first 4 capability classes for cropland and horticultural land.

Maine

- Assessor must record both market value and use value.
- Must be 5 acres and gross at least \$2,000 in 1 of 2 OR 3 of 5 years.
- Owner must file each 5th year a statement of gross income for previous 5 years.
- Have open space land provisions that reduce taxes on those properties depending on situation.
- Land that changes from being eligible for use value will be penalized for the change.
 - If land has been using use value less than 5 years, penalty is 20 percent of fair market value at time of change.
 - If land has been using use value more than 5 years penalty is all taxes that would have been paid during the last 5 years less the taxes that were paid during that time plus interest.
- Use value of pasture is \$325 with range from \$100 to \$525
- Use value of cropland is \$400 with range from \$150 to \$600
- Use value of blueberry land is \$400 with range from \$200 to \$800
- Use value of horticultural land is \$450 with range from \$350 to \$650
- Within range adjustments made for soil type, conservation measures, convenience and proximity to farmstead, field size and shape, slopes, drainage, aeration, accessibility to markets, rocks, climate, commodity yield and price.

Have Tree Growth Law to value timber.

Maryland

First state to have use value

State Dept of Agriculture buys development rights on existing farms ensuring they will stay in farming.

Funding for above comes from Agricultural Transfer tax imposed when lands with use value assessment are sold for non-agricultural use. (Buyer must promise to keep in agricultural use for 5 years.)

Rate of tax is 5 percent of sale value when tract >20 acres, 4 percent when less than 20.

Assessor can require gross income of \$2,500 to be eligible for use value if they desire. Home sites not given use value.

If owner requests higher value zoning, must be market value taxes.

If county changes zoning, farmer can maintain use value.

There is use value for timber.

July 99 cap rate = 9 percent interest - 2 percent inflation + 5 percent capital market imperfection + 1 percent effective tax rate = 13 percent

Use values: Class A = \$400 full value, \$200 assessed value; Class B = \$300 full value, \$150 assessed value; Class C = \$200 full value, \$100 assessed value; Class D = \$90-\$120 full value, \$45-\$60 use value. There is also a class E, 2 classes of woodland, and marshland.

Massachusetts

Has forestry classification. If owner requests and is approved, taxes will be at normal rates on 5 percent of FMV.

City has right to purchase any tract being removed from classification. If removed from use valuation, owner must pay taxes forgiven for up to 5 preceding years. This is 8 percent tax on forest products taken from land.

Use value for agricultural and horticulture land must be on tracts 5 or more acres actively used in agricultural production.

Whenever land removed from use, 1 of 2 alternative penalty taxes must be paid.

One alternative is a 5-year roll back tax. This is difference between market value and use value taxes.

Second alternative is if land purchased, receives use valuation, and then sells during 1st 10 years, taxes are 10 percent of market value if sold in 1st year of ownership, 9 percent in 2nd, etc.

City has right to purchase classified land whenever owner plans to sell or convert to non-qualifying use.

To qualify for use value must have 5 acres and \$500 gross sales plus \$5 for each additional acre in size unless the additional acre is woodland or wetland in which case an additional \$.50 is required per acre.

Property owners must apply for use valuation. In addition, each year must state that will continue in use value.

Any land placed in use valuation will have a lien filed at time use valuation is implemented.

Use value taxes are the commercial rate applied to use value.
Also have similar program for recreational lands.
Use values for property set by 'Farm Valuation Advisory Commission'. They set value for several land uses.
Commission uses share rental approach for several typical farms. Cap rate is 60 month FLB rate + tax rate.
Use values set at \$1100 for vegetables, \$310 crops, \$750 orchard, \$180 pasture, \$45 for non-productive land, and for cranberries \$17,750.

Michigan

Does not have use value as in most other states.
Agricultural properties are appraised at market value.
Agricultural properties are exempt from local taxes supporting schools.
Owner must complete affidavit to qualify.

Minnesota

Called 'Green Acres' Program. Landowners must apply.
Assessors value using remote parcel concept. Is a directive that capitalized income be used on agricultural properties.
Difference between use tax and market value tax is called deferred tax.
Sale of land currently qualified for non-qualified use requires paying 3 years deferred taxes.
State recently added program for urban counties having same eligibility requirements but not requiring repayment of deferred taxes if land is removed from program.
State had own farm assistance program in 1999. Each FSA contract holder was given up to \$4/acre with a \$5600 cap on receipts.

Mississippi

Includes government program in determining values.
Property owner must provide assessor with list of real and personal property and what part of the real is agricultural property.
Agricultural land valued in current use, H&BU.
Cap rate shall not be less than 10 percent. The rate built from 'interest', property tax', 'risk', and 'depreciation' will be used if result is greater than 10 percent.
For statistical purposes, agricultural land market values are also determined.
Income based on 10-year average, max 1-year change in taxes is 10 percent.
Use 8 soil capability classes as base for cropland, 5 forest site classes for forestland.

First 5 soil capability classes are cropland.
Each county provided use value/acre for each of 5 cropland classes and 4 forest site classes.
Landowner must apply each year for use value. Home sites are valued at market value.
Typical farms identified for 7 resource areas.
Income is determined for typical farms, each using one of the four-cropland soils.

Finally a 10-year average net result to land is determined for each resource area.
NASS county yield and acre information is used as the starting point.

Missouri

Has use value, but apparently state has minimal guidelines for counties.
Divides agricultural lands into 8 grades (capability classes).
Forestland in land grades 1-4 placed into land grade 6
No information provided on how values placed on these land classes.
Apparently this is left to county assessor.

Nebraska

Agricultural lands assessed at 80 percent of their market value.
Tax for current and past three years is recovered if property no longer eligible.
Eligibility: land zoned agricultural or horticultural and outside corporate limits. Can be inside limits if city body approves.
Subdivided lands are not eligible for use valuation.
Owners make application to receive.
State maintains up-to-date list of sales for assessors to use to value properties.
Assessors value property for market value using standard procedures for putting value on land capability group.
State divided into 8 regions. There is an 'Agricultural and Horticultural Land Valuation Board' in each region.
Boards meet to determine percent change in value of each land class or subclass in their counties in order to establish equalization of value between the various counties in their area.
Nebraska Tax Equalization and Review Board reviews work of Agricultural and Horticultural Land Valuation Boards and can also make adjustments in the values in a particular county.
Land Uses: Irrigated Cropland, Dry Cropland, Grassland, and Wasteland.
Rights-of-way carry no value but are to be inventoried.
Maximum parcel size is a section.
In the state, there are 16 land capability groups used to denote quality.
Some counties may not have all groups.

New Jersey

Land having been in agricultural use ≥ 2 years and ≥ 5 acres eligible for agricultural use valuation.
Must have \geq \$500 gross payments.
Landowner applies to state and he and county assessor informed of decision.
State commissioner checks once each 3 years to denote continuing eligibility.
Tracts previously having agricultural use but no longer eligible are subject to rollback taxes. Taxes that would have been paid for current and preceding 2 years must be paid.
No guidelines to county assessor on how he places use value on agricultural land??

Assessor directed to consider only those indicia of value that such land has for agricultural or horticultural use.

"In addition to personal knowledge, judgment, and experience he shall consider available evidence of agricultural and horticultural capability derived from the soil survey, and recommendations of value of such land as made by any county or state-wide committee established to help the assessor."

New Mexico

Landowner must demonstrate eligibility but does not need to reapply each year.

Land having non-agricultural income > agricultural income presumed non-agricultural.

Home sites are not agricultural land.

Land valued using income approach using agricultural income.

Cap rates set for 5 years at a time. Consideration of FLB and PCA rates made when choosing rate.

Grassland income is based on animal units. Division sets carrying capacity of each grazing land class each year.

Considered are drought or natural conditions reducing carrying capacity and information from livestock industry, BLM, SCS, Forest Service, university agricultural departments and state and federal departments of agriculture.

Division sets net income per AU.

Agricultural land classified as: 'irrigated agricultural land' and 'dry land agricultural land'. CRP land valued as to where it came from.

Land classified using following sources: Land capability classes; physiographic groups based on topography, slope, or position; soil survey information; current NM county assessor's manual; weather data; cost and availability of water, and crop information.

North Dakota

Agricultural value = capitalized value of annual GROSS return.

Begins with countywide analysis for each county.

Using NASS county acreages and yields and reported prices for last 10 years determine gross income from crops.

Add in government program income (CRP and others) for county.

Apply typical landlord shares to income components.

Use NASS livestock production information for cull cows and calves used to determine gross livestock income for county.

Using NASS data, average per acre income for cropland estimated as well as average per acre range income per acre.

These gross returns for both land groups are capitalized into a land value estimate.

Cap rate is average of 10 of last 12 years of interest rates reported by FLB St. Paul (high and low eliminated)

Nothing stated on how the county averages are used to value individual tracts.

Oklahoma

4 uses: cropland, improved pasture, native pasture, and timber/waste

Use value defined to be 75 percent of rental income value + 25 percent of market value of land.

Contractor provided a soil productivity index for each soil series (soil survey mapping unit) in each county of state.

Capitalization rate built: 65 percent FLB rate + 17.5 percent second mortgage rate + 17.5 percent CD rate

Cash rentals for each of 4 uses used to determine rental income for each productivity point for each use. The cash rental productivity point net income is capitalized into value of a cash rental productivity point.

Land sales analyzed to determine cash value of a productivity point for each of 4 land uses.

Value of productivity point for each use in a county = 25 percent of cash value of productivity point + 75 percent of rental value of productivity point.

Determining value of the 4 productivity point values is the responsibility of the county assessor.

Assessor has determined for each tract: acres of each soil series (mapping unit) in each of the four uses.

Value of tract determined by summing total productivity points in tract in each use times value of point for that use.

Oregon

Have exclusive agricultural use zoning that limits use to agricultural use.

Land in exclusive agricultural use zone qualifies for agricultural use value.

Land not in an exclusive agricultural use zone can also qualify for agricultural use value.

If land not in exclusive agricultural use zone, must have income of \$650 if 6 acres or less. If between 6 and 30 acres must have income of \$100 per acre. If tract is greater than 30 acres, tract must have a minimum of \$3000 income.

If land not in exclusive agricultural use zone, owner must apply for agricultural use value.

Valued using income approach. Cap rate = last 5 year FLB rate + current county effective tax rate.

Have county board of review to evaluate factors used by assessor.

Maximum assessed values for a county can only increase 3 percent each year.

Value for a land group in a year is the lesser of the maximum or the calculated value for the land group.

Up to 10 years of taxes will be recovered upon tract use changing to disqualified use.

Assessor determines value for each capability class of land in a value zone. There may be several value zones per county.

Typical rental arrangements for each value zone are used to determine landlord net income. Property taxes are deducted.

Rental net incomes are divided by sale price to determine rate of return. If rate < prudent rate (FLB average), then can't use calculated rate to value. (Must use FLB rate to capitalize expected net income instead.)

What this means is if rate of return > prudent (FLB) rate, use rate of return, otherwise use prudent (FLB) rate.

South Carolina

Have 7 production classes of cropland.

Are using expected corn and soybean yields for each class.

Fixed and variable costs obtained from Clemson.

Overhead set at 8 percent of variable costs.

Management set at 10 percent of variable cost.

Cap rate = average FLB rate + local property tax rate + risk component of 15 percent + non-liquidity component of .3 percent.

Overhead and management rates were first set in 1979. Commission adjusts as often as deemed necessary, but at a minimum every 3 years.

Range of values set for each of 7 classes. Average must be used unless assessor justifies something different.

Above also done for 7 classes of timber based on site index.

Cap rate for timber just like for agricultural land except risk rate is 6.67 percent.

Texas

Owner must apply. For current law only apply once; for first law must apply each year.

Does not apply to improvements other than fences and certain other appurtenances.

Land approved for use value taxation is subject to tax penalty when land taken out of agricultural use. Owner must pay 3-5 year recapture of taxes + interest.

Cap rate = greater of 10 percent or FLB rate + 2.5 percent. (5-year average FLB rate.)

7 broad land classes recognized: Irrigated cropland, dry cropland, orchard, improved pasture, native pasture, waste, and other.

Net income to land determined for each land class (5-year average). There can be subclasses for each class if necessary.

Market value must also be determined for each tract.

Net to land determined using cash or share rent information.

Hunting lease information is to be included.

Income the landlord receives from government deficiency programs is to be included as a return to land.

Land in CRP valued using the land class it was in before entering the program. CRP income not included when calculating net to land.

Have similar procedures for timber.

Utah

Capitalize net income using 5-year average FLB rate.

Values set by state commission. The county assessor is responsible for putting agricultural land in right class.

Fair market value to be included on tax notice to owner.

Market value will be used to calculate roll back taxes when land leaves agricultural use. (5 years of full tax - agricultural use tax)

Is State Farmland Evaluation Advisory Committee that meets each year to set range of agricultural use values of each class of agricultural land.

Owners must make application to receive agricultural use taxation.

Minimum size is 5 acres unless special qualifying situation.

Timber production qualifies.

Have 4 or 5 irrigated cropland classes, several orchard classes, two dry land classes, and a meadow class.

For grazing there are 4 classes determined by number of points the tract receives.

Points = total of:

1-6 based on climate and site class.

1-3 based on soil class

1-4 based on vegetative condition

1-3 for vegetative quantity

If tract has 14-16 points is Graze I

10-13 points is Graze II

7-9 points is Graze III

4-6 points is Graze IV

West Virginia

Must be 5 acres with gross income of \$1,000. Smaller tracts possible if agricultural use demonstrated.

Use value determined by capitalizing net rental income into value.

Owner must apply each year.

Commercial forestry not included.

Can use share or cash rent.

Willing renter-willing rentee leases for last 8 years used as base.

Cap rate will include: a) a summation determined discount rate; b) a recapture component; c) a property tax component.

a) = Safe rate + risk adjustment + non-liquidity rate + management rate.

b) Since agricultural land is non-wasting, no recapture component added.

c) Statewide average = assessment rate X average tax on class II property.

Land classified as tillable, pasture, and woodland.

Each of above 3 classes divided into 5 subcategories (A-E)

Wisconsin

Goals: protect farm economy and curb urban sprawl.

Penalty for changing use: Taxes that would have been collected during the last 2 years at market value less taxes paid.

Assessor responsible for finding a verifying land is agricultural land.

Timber not included.

5 categories of Agricultural land a) 1st grade tillable cropland, b) 2nd grade tillable cropland, c) 3rd grade tillable cropland, d) pasture, and e) specialty land.

Calculate gross income/acre using 5 years of yields and 5 years of prices.

Determine net income/acre (subtract cost of production from gross). (USDA costs of production estimates are used.).

Cap rate = Municipal tax rate + 5-year average agricultural loan rate.

Average values determined for 1st grade land. Values for 2nd and 3rd grade land are found using Soil Productivity ratios.

Pasture rent figured at 30 percent of average cropland rent.

Have tax rebate program for agricultural producers having gross farm profits of at least \$6,000 in preceding year.

Tracts must be ≥ 35 acres in agricultural use.

Credit = 10 percent of first \$10,000 of property taxes on farmland.

Total credit was \$30.6 million in 98. Average was \$183.

Wyoming

For irrigated cropland: 5 yr average prices; landlord 40 percent share.

50 percent of landlord gross income subtracted for expenses.

15 percent of landlord value of production subtracted for necessary landlord management practices.

Net income per acre capitalized to get value per acre.

Dry cropland: 5 year average prices with landlord receiving 33.33 percent share.

Expenses are 32 percent of landlord income.

There is additional 50 percent reduction in gross production to cover necessary management practices.

Net income per acre capitalized to get value per acre.

Range: 5-year average cash rent per AUM.

Expenses are 10 percent of rent.

AUM's per acre X net rent per AUM = net rent per acre.

Capitalize net rent to value per acre

CRP valued like land it was before put into program.

Cap rate = long term portfolio interest rates averaged over a 5-year period.

Used Omaha FLB.

Assessment rate = 9.5 percent