Kansas Statutes Annotated

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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.

Date Composed: 01/28/2000 Date Modified: 02/02/2000

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 ht 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 ¾ of a percent to 2 ¾ 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 x .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 is 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 x .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 x .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 decrease 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 country 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 untaken 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 then 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.

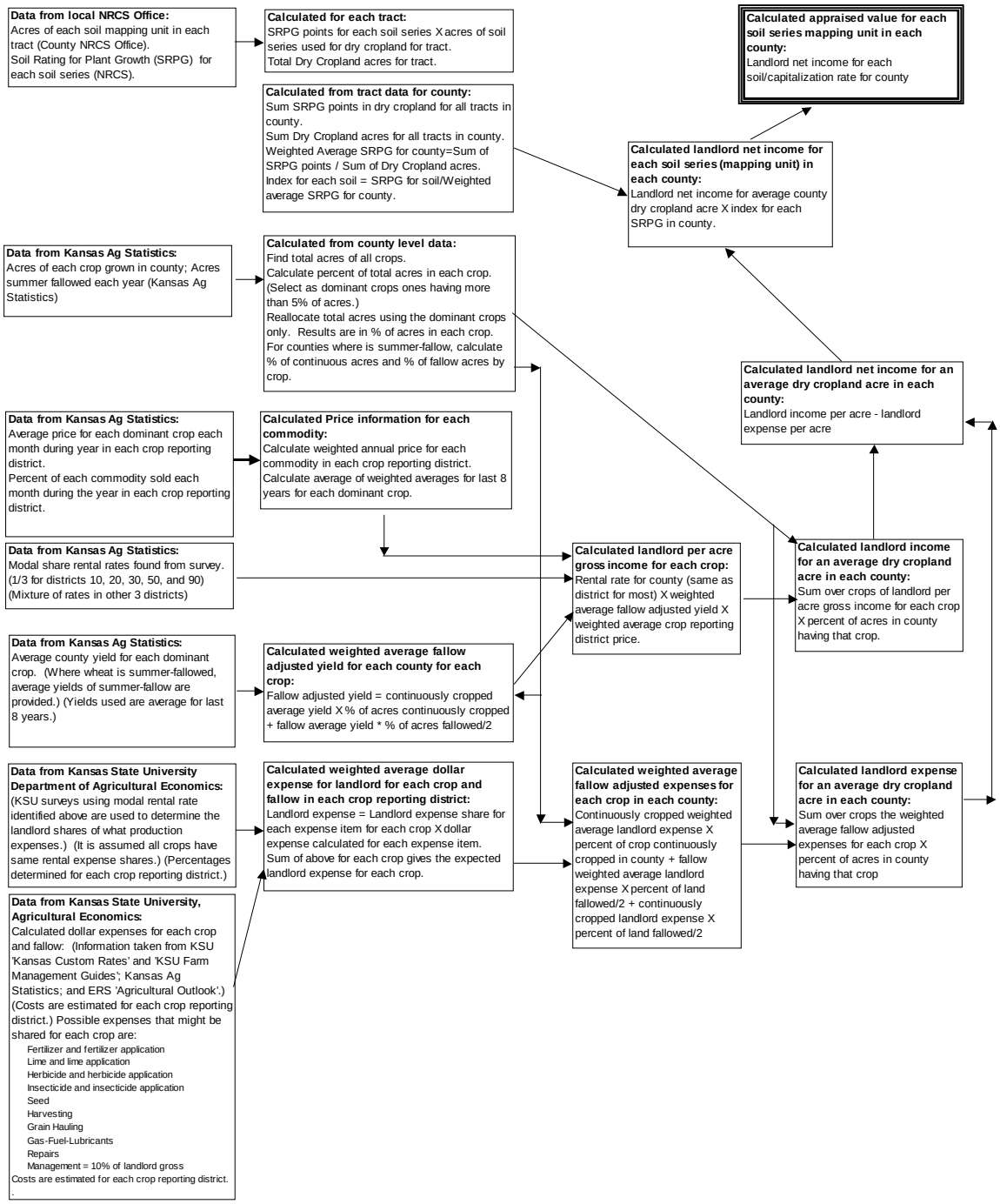

Figure 1. Dry Cropland Valuation Process in Kansas

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

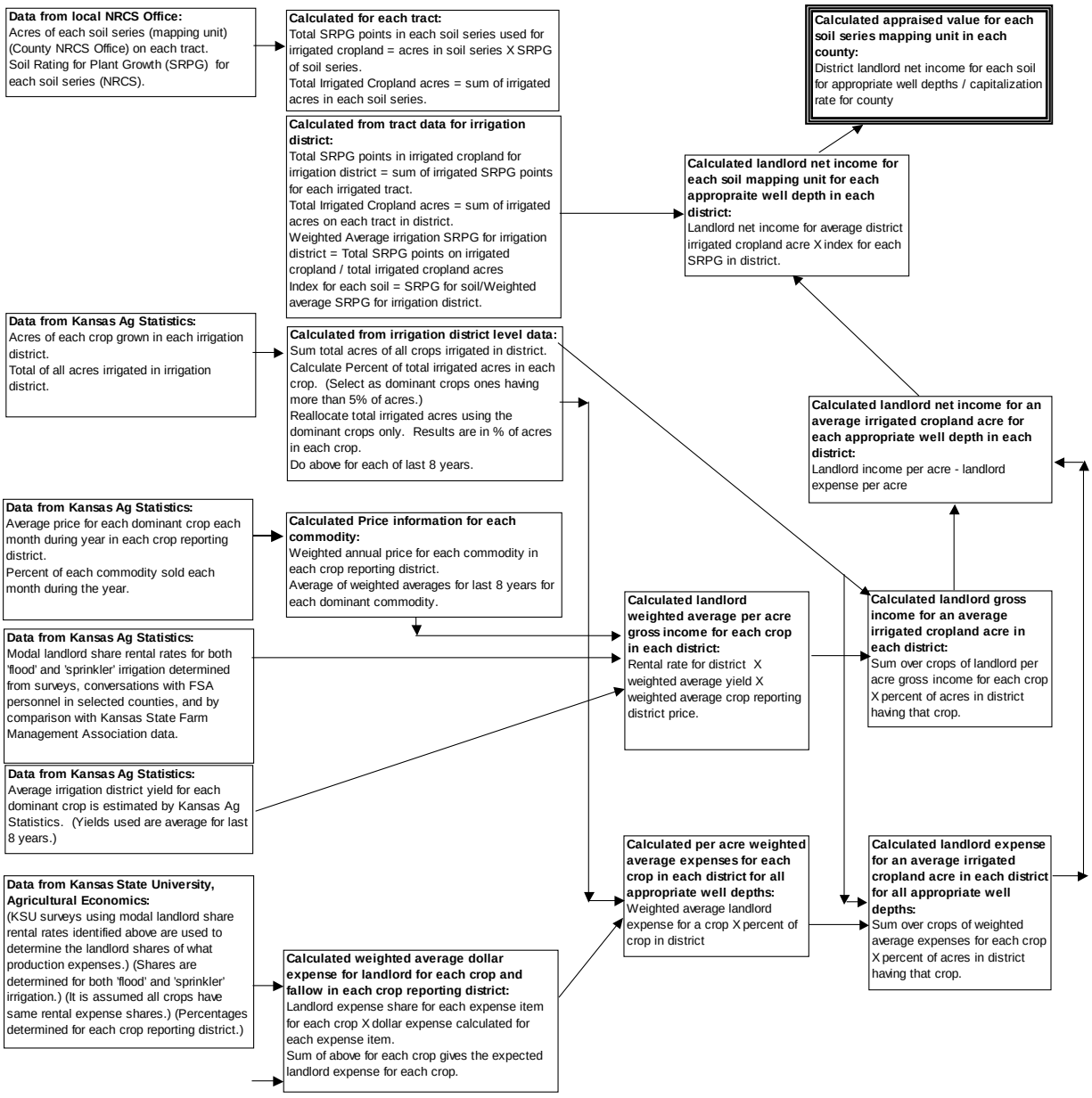

Figure 2. Irrigated Cropland Valuation Process in Kansas

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

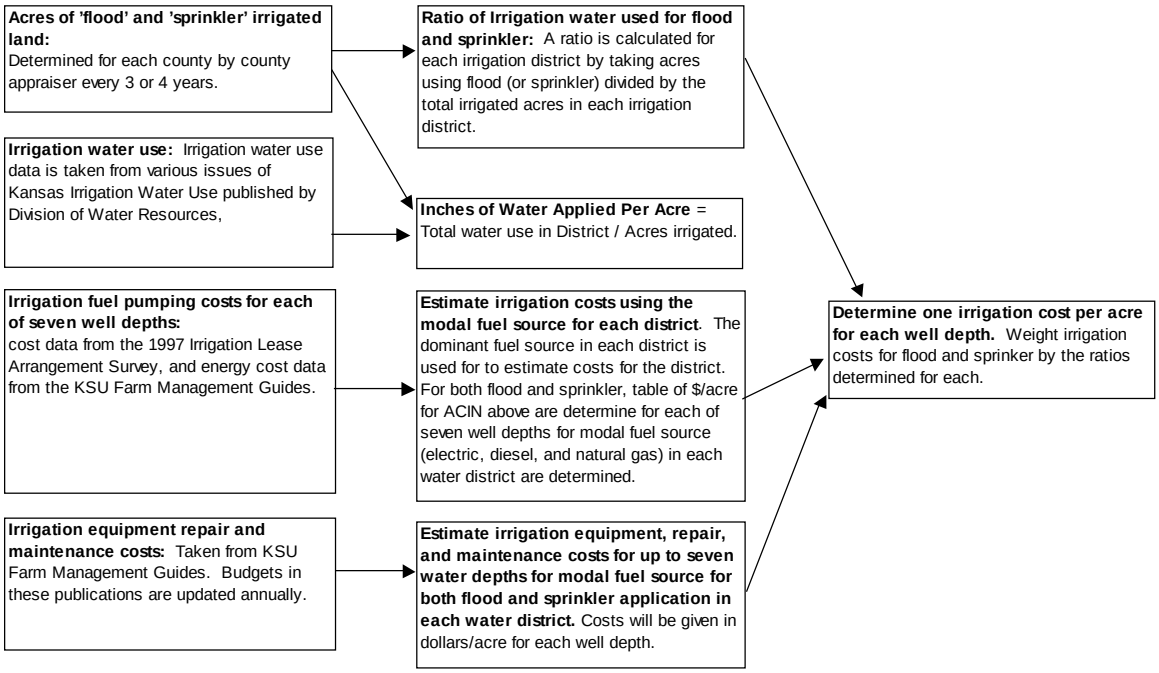

Figure 3. Irrigation Cost Estimation Process in Kansas

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.

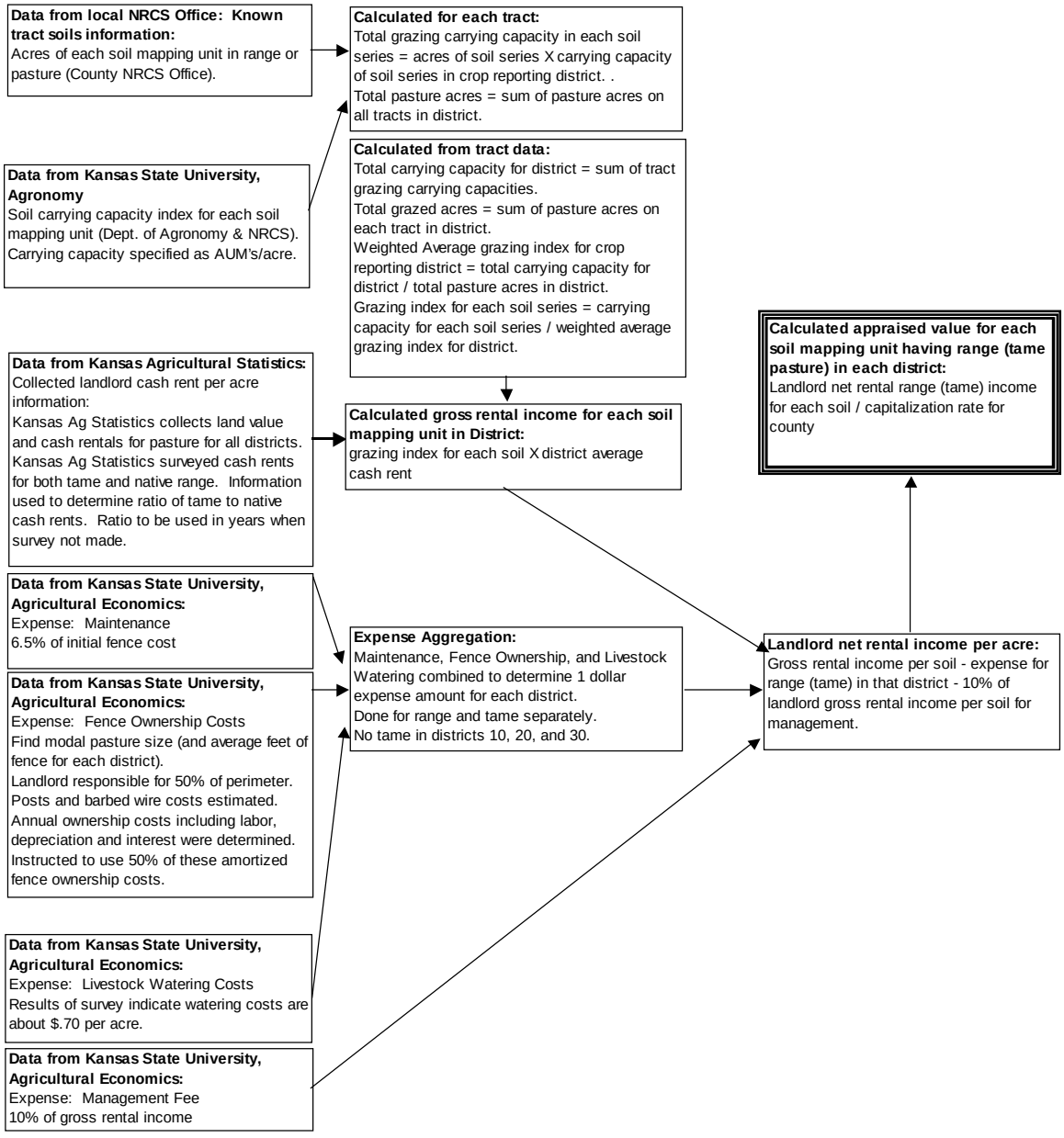

Figure 4. Pasture and Range Valuation Process in Kansas