PRODUCTIVITY VALUATION OF AGRICULTURAL LAND

Prepared by Department of Revenue
Property and Special Taxes Division

OVERVIEW

Beginning with the 2010 assessments (for taxes payable in 2011) agricultural land in South Dakota will be assessed based upon its productivity value. The Department of Revenue (Department) contracts with the Economics Department of South Dakota State University (SDSU) to produce the "productivity value" or the "formula value" for the productivity valuation system. This value is the starting point for valuing all agricultural land in the state. This starting value is adjusted by the county Director of Equalization to ensure uniform and fair valuations.

The data used to establish the productivity value is from official estimates published by the United States Department of Agriculture, National Agricultural Statistics Services (USDA/NASS). These official estimates are based upon surveys of farmers, ranchers and agribusinesses.

The productivity value formula multiplies the gross revenue by the landlord share percentages, and then divides this amount by the capitalization rate: [gross revenue × landlord share percentage] ÷ [cap rate]. The gross revenue for cropland is determined by using an 8-year Olympic average of yields and commodity prices. The gross revenue for non-cropland is determined by using an 8-year Olympic average of cash rents. The landlord share percentages are 35% for cropland and 100% for non-cropland. The capitalization rate is 6.6%. The following examples show how the formula works:

- Cropland: If a county has a gross revenue of $300 an acre for cropland, the formula would produce a value of $1,590.90 an acre ($300 × 35% ÷ 6.6%). This represents the assessed value per acre of the average cropland in the county.

- Non-cropland: If a county has a gross revenue of $25.00 an acre for non-cropland, the formula would produce a value of $378.79 an acre ($25 × 100% ÷ 6.6%). This represents the assessed value per acre of the average non-cropland in the county.

The Department sends each county their average assessed value per acre for cropland and non-cropland, along with the background information provided by SDSU. The counties then spread these values according to the soil survey. As with the old market valuation system, the values spread by the soil survey create the base valuation system, upon which the county makes adjustments.

HOW THE GROSS REVENUE PER ACRE IS DETERMINED

The gross revenue per acre is the starting point for the productivity formula. SDSU uses USDA/NASS data to establish the gross revenue per acre in each county for an 8-year period. The period from 2001 to 2008 is used to establish the 2010 values. An 8-year Olympic average determines the gross revenue per acre for each county. In an 8-year Olympic average, the low and high years are thrown out, and the remaining six years are averaged. Each year, the newest year of data is added, the oldest year is discarded, and a new Olympic average is calculated.

Cropland Data

The data used to establish the cropland productivity value is all published by USDA/NASS. For each crop in each county, USDA/NASS publishes (1) the total planted acres for all purposes, and (2) the total production. The commodity price is a published statewide number, USDA/NASS's state level marketing year average price. This price is weighted based upon the quantity of the commodity sold each month during the marketing year. The prices do not include allowance for CCC loans outstanding, purchases by the government, or deficiency payments.

The actual production of each crop is multiplied by the commodity price for the crop to determine the gross revenue for the crop. The gross revenue of all of the crops is added together and divided by the number of acres, to get the gross revenue per acre in the county. An example will illustrate how the system works. In 2001, Ziebach County had this mix of crops:

Crop	Acres	Production	Value/Unit	Gross Revenue
Barley	2,500 acres	68,000 bushels	$2.00/bushel	$136,000
Corn	3,000 acres	144,000 bushels	$1.75/bushel	$252,000
Hay	86,000 acres	130,800 tons	$65.50/ton	$8,567,400
Oats	9,500 acres	66,000 bushels	$1.67/bushel	$110,220
Sorghum	2,000 acres	26,000 bushels	$1.7136/bushel	$44,553
Sunflower	8,600 acres	8,170,000 pounds	$0.0918/pound	$750,006
Wheat	57,000 acres	1,071,000 bushels	$2.78/bushel	$2,977,380
Total	168,600 acres			$12,837,559

For 2001, the gross revenue per acre is $76.14 ($12,837,559 ÷ 168,600). This process is repeated for 2002 to 2008, producing gross revenues per acre of:

2001	$76.14
2002	$21.11
2003	$51.40
2004	$61.20
2005	$102.38
2006	$43.37
2007	$129.79
2008	$181.89

The Olympic Averaging process throws out the low ($21.11) and high ($181.89) years, and averages the remaining six years. Ziebach County's gross revenue per acre used to set the 2010 cropland values (for taxes payable in 2011) is $77.38.

Non-Cropland Data

For non-cropland, cash rents determine the gross revenue. From 2001 through 2007, the Department contracted with USDA/NASS to conduct a survey of cash rents in each county. In 2008, USDA/NASS conducted the survey as part of a nationwide program to establish cash rents.

USDA/NASS's 2008 survey did not contain enough responses to publish a cash rent in every county. In counties without a published 2008 number, a cash rent was determined using the past rent of the county, rents from the surrounding counties, or other rental information. The Department is currently working with SDSU to find an alternative to the cash rent data.

Except for the source of data, the process to establish the gross revenue for non-cropland is the same as the process for the cropland. An 8-year Olympic average of the cash rents is used to establish the gross revenue per acre. For Ziebach County, the 8-year period of cash rents is:

2001	$6.10
2002	$6.20
2003	$6.20
2004	$7.20
2005	$7.50
2006	$8.10
2007	$7.60
2008	$9.70

The Olympic Averaging process throws out the low ($6.10) and high ($9.70) years, and averages the remaining six years. Ziebach County's gross revenue per acre used to set the 2010 non-cropland values (for taxes payable in 2011) is $7.13.

HOW THE "GROSS REVENUE PER ACRE" PRODUCES THE "AVERAGE VALUE PER ACRE"

The productivity value formula multiplies the gross revenue by the landlord share percentages, and then divides this amount by the capitalization rate: [gross revenue × landlord share percentage] ÷ [cap rate]. In the formula, the "landlord share" represents the percentage of the gross revenue the owner would expect to receive from owning the land. Dividing this expected revenue by the capitalization rate is a method used to establish the value for an income-producing asset, in this case the land.

The landlord share percentages and the capitalization rate are set by statute, SDCL 10-6-33.28. The landlord share percentages are 35% for cropland and 100% for non-cropland. The capitalization rate is 6.6%. The formula produces the assessed value per acre of the average property in the county. Like all other property, the taxable or "equalized" value is 85% of the assessed value. Using the numbers from the example above, Ziebach County will have an average cropland value of $410.35 ([$77.38 × .35] ÷ .066) and an average non-cropland value of $108.03 ([$7.13 × 1.0] ÷ .066).

In a "pure" productivity valuation system, the landlord share percentages would be determined by examining contracts between landlords and tenants. The capitalization rate would be determined by analyzing the market for agricultural land and would change as market conditions change. For South Dakota's productivity valuation system, these parts of the formula were calculated to produce a "revenue neutral" result. The old valuation system produced a total statewide agricultural value of $18.5 billion; 85% of the value was cropland and 15% of the value was non-cropland. The landlord share percentages and the capitalization rate were calculated to produce the same amount of statewide agricultural value, with the same percentages of cropland and non-cropland.

Although the statewide amount of agricultural value in the productivity system is the same as from the old valuation system, individual counties increase or decrease significantly. To prevent sudden large shifts in values, and to ensure they had time to address any unanticipated problems, the Legislature limited increases or decreases to 15%, 20%, or 25% a year, depending on how far the county is from its full agricultural income value.

HOW THE AVERAGE VALUES PER ACRE ARE USED TO VALUE ALL OF THE AGRICULTURAL LAND IN THE COUNTY

Once the productivity formula produces the average crop and non-crop values per acre, the valuation process is the same as under the old market system. Each soil in the county is rated on a scale from 1.0 to .1. The average cropland value per acre is projected up to establish a value for the top rated crop soil. The average non-cropland value per acre is projected up to establish a value for the top rated non-crop soil. Every soil type is valued in relation to these top rated soils. Therefore, a crop soil with a rating of .88 has a value that is 88% of the top rated crop soil.

Individual parcels of land typically contain many different soils. The soil survey provides an inventory of the acres of each type of soil in each parcel. The number of acres of each soil type in the parcel is multiplied by the dollar value for that type of soil. The dollar values are then added together to determine the total value of the parcel.

An example will illustrate how this system works. A county has a value of $125 for cropland with a rating of 1.000, and $100 for non-cropland with a rating of 1.000. The rating of each soil type in the parcel is multiplied by these "top dollar" values to determine its value. For example, the crop soil HlB has a unit value of $90 ($125 × .720); the non-crop soil GhC has a unit value of $63 ($100 × .630). The unit value of each soil type is multiplied by the number of acres of that soil type in the parcel. These individual results are added together to get the total value of the parcel.

Map Unit	Rating	Acres	Unit Value	Total
Crop Soils				
HlB	.720	42	90.00	3,780.00
HeA	.820	41	102.50	4,202.50
ReA	.770	8	96.25	770.00
HkA	.810	9	101.25	911.25
Non-Crop Soils				
GhC	.630	44	63.00	2,772.00
JbD	.250	14	25.00	350.00
BeE	.260	2	26.00	52.00
TOTAL		160		12,837.75

Again, this is the starting point for valuing the parcel. The Director of Equalization will need to make adjustments to ensure uniform and fair valuations for all of the agricultural land in the county.

APPEAL RIGHTS

The transition to productivity valuation does not change the appeal rights of property owners. In South Dakota, property cannot be assessed for more than its market value and must be assessed equitably in relation to other property in the county. Each property owner should ask:

(1) "Could I sell the property for this amount?"

(2) “Is my property assessed consistently with similar property in my county?”

If the answer to either question is “no,” the property owner should first talk to the County’s Director of Equalization. The Director can show sales of similar properties. In addition, the Director can show how the productivity valuation system works for a specific parcel of land, and how similar property is valued. If you still disagree with the assessment of your property, you can appeal the valuation the same way you would have appealed a valuation based upon the market.