

SOUTH DAKOTA DEPARTMENT OF REVENUE

# Ag Land Productivity

Property Tax Division



# Productivity Formula

**Average Value Per Acre =**  
**Olympic Average Gross**  
**Revenue Per Acre**  
**× Landowner's Share**  
**÷ Cap Rate**

| Cropland<br>Landowner's<br>Share | Non-Cropland<br>Landowner's<br>Share |
|----------------------------------|--------------------------------------|
| 35%                              | 100%                                 |

Landowner's share and the capitalization rate are both  
established by South Dakota Codified Law

# **SDSU Compiles Data from USDA/NASS for Each County**

All data is county specific except  
commodity price

## **Cropland Data**

For each commodity reported :

- Total planted acres for all purposes
- Total production

## **Non-Cropland Data**

- Cash rents

## Example

### Calculating Olympic Average

| 2012   | 2013   | 2014               | 2015   | 2016   | 2017   | 2018                 | 2019   |
|--------|--------|--------------------|--------|--------|--------|----------------------|--------|
| \$9.50 | \$9.40 | \$5.90<br>(lowest) | \$7.90 | \$7.98 | \$8.20 | \$10.35<br>(highest) | \$9.00 |

8-year Olympic average throws out the low (\$5.90) and high (\$10.35) years

Remaining six years are averaged

**Gross Revenue Per Acre = \$8.66**

# Soil Table Example

| Symbol | Map Unit Name                    | Subcl<br>Land<br>Cap | Use<br>Highest<br>and Best | Slopes | Acres     | Rating<br>Final<br>Crop | Rtg<br>Adj<br>Range |
|--------|----------------------------------|----------------------|----------------------------|--------|-----------|-------------------------|---------------------|
| Map    |                                  |                      |                            |        |           |                         |                     |
| Oa     | Onita silt loam                  | 2c                   | C                          | 0-2    | 1,805.9   | 1.000                   | 0.852               |
| Bo     | Bon loam                         | 2c                   | C                          | 0-2    | 1,396.2   | 0.989                   | 0.852               |
| CpA    | Clarno - Prosper                 | 2c                   | C                          | 0-3    | 17,653.8  | 0.877                   | 0.668               |
| BaA    | Beadle loam                      | 2s                   | C                          | 0-3    | 1,279.2   | 0.785                   | 0.609               |
| HdA    | Houdek - Dudley                  | 2c/4s                | C                          | 0-3    | 103,808.6 | 0.696                   | 0.508               |
| DmA    | Delmont - Enet                   | 4s/3s                | C                          | 0-2    | 2,582.8   | 0.536                   | 0.440               |
| DmB    | Delmont - Enet                   | 4e/3e                | C                          | 2-6    | 10,402.7  | 0.477                   | 0.423               |
| Hw     | Hoven - Plankinton               | 6s/4w                | N                          | 0-1    | 25,214.5  | 0.390                   | 0.896               |
| BeE    | Betts - Ethan                    | 7e/6e                | N                          | 15-40  | 741.8     | 0.240                   | 0.511               |
| Hv     | Hoven silt loam                  | 6s                   | N                          | 0-1    | 8,936.7   | 0.198                   | 0.896               |
| Wp     | Worthing silty clay loam, ponded | 8w                   | N                          | 0-1    | 4,607.9   | 0.100                   | 0.100               |

# Calculating Top Dollar

## Weighted Soil Rating

- Mechanism used to convert the average dollar per acre to a value for the highest rated soil (Top Dollar)
- Average rating that encompasses all soils in that county
  - Soils that are more prevalent carry more weight

$$\text{Average Dollar Per Acre} \div \text{Weighted Rating} = \text{Top Dollar}$$

## Example

# Calculating the Assessed Value of a Parcel

## Step 1 – DOE applies Top Dollars

Top Dollar value  
x individual soil rating  
= unit value of that soil type

| Unit Map              | Rating | Top Dollar | Unit Value |
|-----------------------|--------|------------|------------|
| <b>Crop Soils</b>     |        | \$1,000    |            |
| • CT                  | .693   |            | \$693      |
| • FAA                 | .868   |            | \$868      |
| • GR                  | 1.0    |            | \$1,000    |
| <b>Non Crop Soils</b> |        | \$300      |            |
| • ACD                 | .386   |            | \$115.80   |
| • HC                  | .589   |            | \$176.70   |

# Calculating the Assessed Value of a Parcel

## Step 2

Unit Value of soil type  
x number of acres of soil type  
= Total Value for soil type

## Step 3

Sum of all soil type values  
= Total Assessed Value

| Unit Map              | Acres | Unit Value | Total Value |
|-----------------------|-------|------------|-------------|
| <b>Crop Soils</b>     |       |            |             |
| • CT                  | 40    | \$693      | \$27,720    |
| • FAA                 | 40    | \$868      | \$34,720    |
| • GR                  | 20    | \$1,000    | \$20,000    |
| <b>Non Crop Soils</b> |       |            |             |
| • ACD                 | 40    | \$115.80   | \$4,632     |
| • HC                  | 20    | \$176.70   | \$3,534     |
| TOTAL ASSESSMENT      |       |            | \$90,606    |



# Summary

## SDSU compiles data from USDA/NASS for each County

### Cropland

- Acres planted
- Acres harvested
- Yields per acre
- Statewide crop prices

### Non-Cropland

- Cash rent

The Department of Revenue calculates an 8-Year Olympic average of the USDA/NASS data.

This gives the **gross revenue** per acre for both cropland and non-cropland.

Average value per acre is divided by the weighted soil rating to give the top dollar per acre for cropland and non-cropland.  

$$\text{average value per acre} \div \text{weighted soil rating} = \text{top dollar value per acre}$$

**Gross revenue per acre** is then entered into the productivity formula.

$$[\text{gross revenue per acre} \times \text{landowner's share}] \div [\text{cap rate}] = \text{average value per acre}$$

|                     | Cropland | Non-Cropland |
|---------------------|----------|--------------|
| Landowner 's Share  | 35%      | 100%         |
| Capitalization Rate | 6.6%     | 6.6%         |

Top dollar is multiplied by each soil rating which is then multiplied by number of acres of that soil in a parcel, giving overall assessed value for a particular parcel.

$$\text{top dollar} \times \text{soil rating} \times \text{number of acres} = \text{total value for soil type}$$

$$\text{sum of all soil values} = \text{total assessed parcel value}$$

# New Soils Tables

## Why?

Current tables are based  
on soil surveys from the  
70's and 80's

# Web Soil Survey

NRCS has been updating  
their data

## Ag Land Task Force / Legislature

Goal is to have better data for a better system



# New Soil Table Timeline

- Staff turnover
- New soils
- New process for all stakeholders
- GIS issues
- Irregularities in the data

**Requires More Review**

# Questions?



South Dakota  
Department of Revenue



@SDRevenue



South Dakota DOR



Sign-up for our  
E-Newsletter