



# Price Loss Coverage or Agricultural Risk Coverage?

## AgriThought

AgriBank provides financial solutions to meet the needs of production agriculture in America's heartland. We feature our research and analysis in AgriBank Insights as part of our AgriThought initiative to help inform the financial decisions among those we serve.

## Contents

- 2 Decision-making process
- 4 Price Loss Coverage
- 5 Agricultural Risk Coverage
- 7 For more information

*The Agricultural Act of 2014, also known as the Farm Bill, ushered in the most sweeping changes to U.S. farm policy in nearly two decades. Among the biggest changes for crop producers: Direct payments have been eliminated. Farmers will no longer receive fixed payments per acre, whether crop prices are high or low—or even if they did not plant at all. Instead, they must elect one of two commodity programs: Price Loss Coverage (PLC) or Agricultural Risk Coverage (ARC). This is a one-time decision effective at least up through 2018, when the current Farm Bill expires. These programs will provide income support to farmers under adverse price or yield conditions at levels above where their regular crop insurance coverage may apply.*

## Highlights

- **PRICE LOSS COVERAGE.** Farmers will receive payments if a covered commodity's national average marketing year price is below its "reference price" (a new term for target price). Payments will be made on a crop-by-crop basis (using the farm's base acreage and program yield for the particular crop) and only cover from the reference price down to the market loan rate price.
- **AGRICULTURAL RISK COVERAGE.** Farmers who elect ARC then must choose one of two options:
  - ARC-County option—Crop revenue will be estimated using average county yields. Farmers will receive payments if the ARC-County actual crop revenue is less than the ARC-County revenue guarantee.
  - ARC-Individual option—Farmers will receive payments if the actual revenue from all covered commodities is less than the ARC-Individual guarantee.
- **SUPPLEMENTAL COVERAGE OPTION (SCO).** The SCO is a new supplement to the crop insurance choices currently available. Only crops under PLC (not ARC) are eligible. The SCO will be available for the 2015-2018 crop years but not 2014.

# PLC or ARC?



The 2014 Farm Bill requires crop producers and landowners to choose between several commodity program options as a safety net. The primary choice is between Price Loss Coverage (PLC) and Agricultural Risk Coverage (ARC). However, several secondary decisions are also required.

## *Key decision for crop producers:*

### *Other PLC-ARC considerations*

The 2014 Farm Bill:

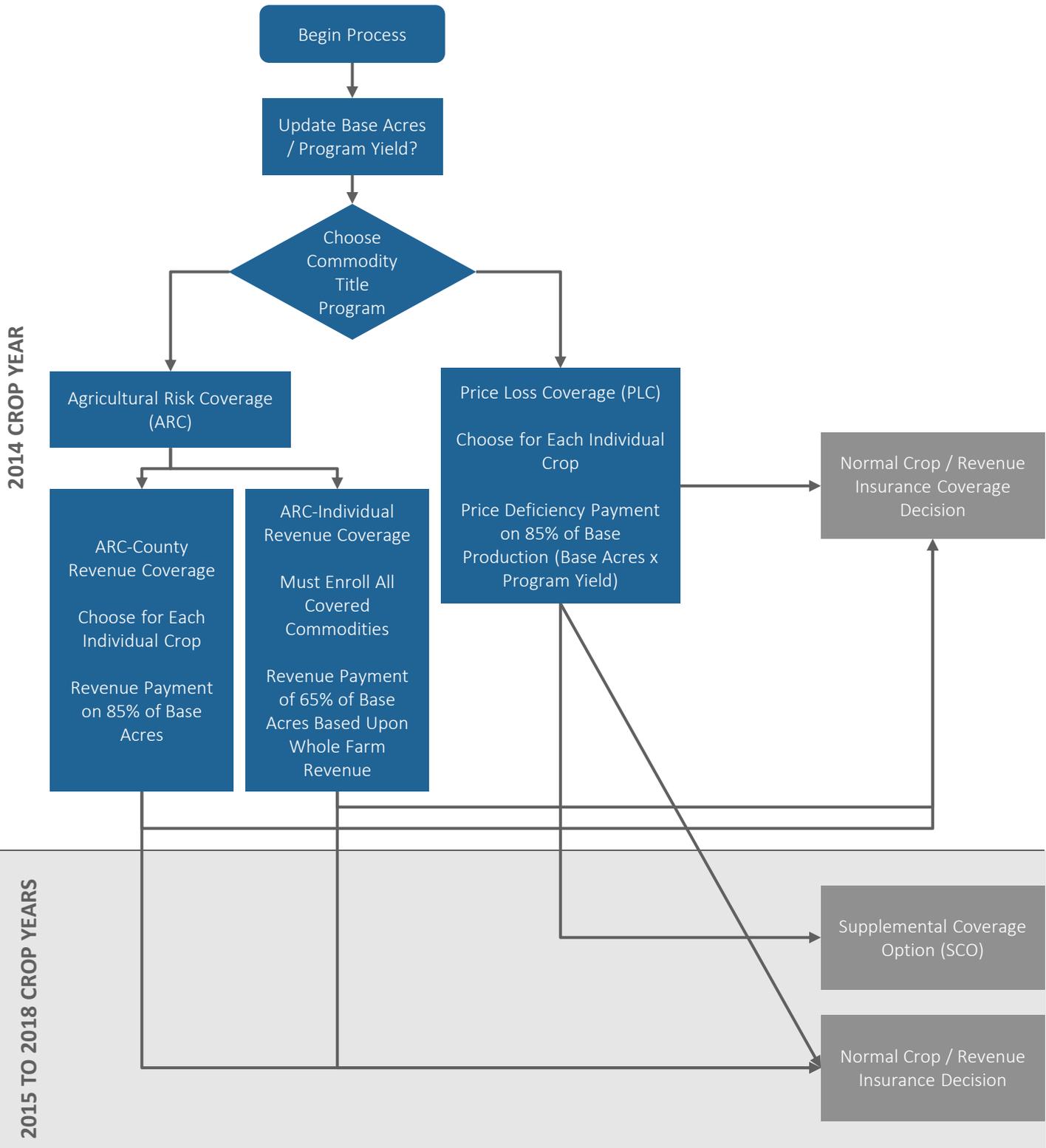
- Allows farmers to choose PLC for some crops and ARC-County for other crops, with ARC-Individual covering all eligible commodities on an entire farm
- Requires all the producers and owners on a farm to make a unanimous decision regarding PLC or ARC—otherwise, the farm may not receive any payment for the 2014 crop year and will be deemed to have elected PLC for the 2015 through 2018 crop years
- Caps how much money an individual producer can receive—\$125,000 for individuals and \$250,000 for married couples annually for all payments under the Title I commodity programs
- Requires producers to comply with conservation and wetlands requirements to be eligible for ARC and PLC

- **UPDATE PAYMENT YIELDS?** Landowners have a one-time opportunity to update their current payment yields established under the 2008 Farm Bill to 90 percent of their 2008-2012 average yields. This can be done on a crop-by-crop basis. Current payment yields for many are 93.5 percent of their 1998-2001 average yields, so if the 2008-2012 average yield is 3.9 percent higher (0.935/0.9) than the 1998-2001 average, the best choice is probably to update. This has particular significance for PLC, for which payment yields directly affect calculated payments.
- **REALLOCATE BASE ACRES?** Landowners also have a one-time opportunity to reallocate their current base acres to reflect their mix of crops in 2009-2012. Landowners can choose to keep their current base acres (typically the average of their 1998-2001 acreages) or reallocate their current base acre total according to the mix of crops in 2009-2012. The current total cannot be increased.
- **PLC VS. ARC?** Producers must choose between PLC (price-only protection) and ARC (revenue protection). PLC is similar to the old target price program, while ARC is a “shallow loss” crop revenue coverage program. For PLC and ARC-County (i.e., based upon county yields), this decision can be made on a crop-by-crop basis. Producers who choose ARC-Individual (i.e., based on a farm’s actual yields) must enter all covered commodities under this option. This is a one-time, irrevocable decision that remains in effect until through the 2018 crop year.
- **FOR PLC PARTICIPANTS, ADD SCO?** Starting with the 2015 crop year, producers who choose PLC will be able to purchase the new Supplemental Coverage Option as an add-on to existing crop insurance coverage. The SCO essentially will allow producers to insure their remaining insurance deductible (up to a maximum 86 percent coverage level) using a county-level yield coverage that mimics the type of individual coverage that is in place (Yield Protection, Revenue Protection, or Revenue Protection – Harvest Price Excluded). The premium for SCO will be subsidized at the 65 percent level. SCO will not be subject to payment limitations.
- **FOR ARC PARTICIPANTS, ARC-COUNTY OR ARC-INDIVIDUAL?** ARC can be taken as either county-level revenue coverage (can choose this or PLC on a crop-by-crop basis) or individual, whole farm-level revenue coverage that provides coverage on an aggregated basis across all program commodities produced on the farm in the particular coverage year. ARC-Individual coverage cannot be chosen on a commodity-by-commodity basis (as with ARC-County and PLC), as it’s an “all-in” choice.

# Covered Commodity Producer Farm Program Decision Process

Title I. Commodity Programs

Title XI. Crop Insurance Programs



## Price Loss Coverage

### What is PLC?

- Similar to traditional counter-cyclical programs
- Is triggered under conditions of low national average prices
- Pays if crop prices fall below set reference prices
- Raises the floor price for all the crops it covers, including corn, soybeans and wheat, so payments will be made much sooner than the previous law

Under PLC, the payment to a producer is triggered when the U.S. marketing year average price falls below a reference price specified in the Farm Bill. The payment, when triggered, will equal the maximum of either the reference price minus the average marketing year price or the reference price minus the loan rate. The payment is on 85 percent of base production (i.e., base acres x program yield) for the particular crop.

The accompanying table shows the reference price and loan rate for major AgriBank District crops covered under the program.



**TABLE: 2014 Farm Bill Commodity Reference Prices and Loan Rates**

CROP	REFERENCE PRICE	LOAN RATE
Corn	\$3.70 / bu	\$1.95 / bu
Soybeans	\$8.40 / bu	\$5.00 / bu
Wheat	\$5.50 / bu	\$2.94 / bu
Rice (long and medium grain)	\$14.00 / cwt	\$6.50 / cwt
Barley	\$4.95 / bu	\$1.95 / bu
Oats	\$2.40 / bu	\$1.33 / bu
Minor Oilseeds	\$20.15 / cwt	\$10.09 / cwt

### EXAMPLE

Suppose a producer has 100 base acres of soybeans with a program yield of 25 bushels per acre. The marketing year average price has fallen to \$4.50 per bushel. What would be the total PLC payment for this producer?

First, since the marketing year price is below the loan rate of \$5.00/bu, the payment would equal the difference between the reference price and loan rate, or  $\$8.40 - \$5.00 = \$3.40$  per bu. The producer's base production is 100 base acres x 25 bu program yield = 2,500 bu. The payment rate is 85 percent, or 85 cents on the dollar. Therefore, the total payment would be  $0.85 \times \$3.40 \times 2,500$ , which would equal approximately \$7,225.

Suppose instead the marketing year average price for U.S. soybeans was \$7.00 per bu. Now the PLC payment would equal the reference price minus the marketing year price, or  $\$8.40 - \$7.00$  or \$1.40 per bu. The producer payment would equal  $0.85 \times \$1.40 \times 2,500$ , or approximately \$2,975.

## Agricultural Risk Coverage



### What is ARC?

- Similar to the old ACRE program
- Is triggered under shallow revenue losses at the county or individual level
- Pays on base acres if actual revenue in a given year falls below a benchmark guaranteed level of revenue
- Requires producers to choose whether to enroll in countywide coverage on a commodity-by-commodity basis or individual coverage that applies to all of the commodities on the farm

### ARC-COUNTY

The county-level revenue benchmark, in a particular year, for a covered commodity is equal to the previous five-year Olympic average of U.S. marketing year average prices multiplied by the previous five-year Olympic average county yield reported by the National Agricultural Statistics Service (NASS). An Olympic average is calculated by taking the past five years of observations, throwing out the highest and lowest observations, and then averaging the remaining three. However, before the Olympic average is calculated, a minimum plug price and yield are used. The plug price is equal to the PLC reference price, and the plug yield is equal to 70 percent of the county T-yield.

### EXAMPLE

Suppose a particular county had a previous five-year history for corn yield along with the marketing year average U.S. price as shown in the accompanying table [assuming the April World Agricultural Supply and Demand Estimates (WASDE) are accurate for 2013/14].

MARKETING YEAR	AVERAGE CORN PRICE	COUNTY YIELD
2009-10	\$3.55	177.0
2010-11	\$5.18	186.4
2011-12	\$6.22	174.6
2012-13	\$6.89	120.7
2013-14	\$4.60	187.8

The county T-yield is 180 bushels per acre (bpa). Therefore, the plug yield (70 percent of T) is 126 bpa. The plug price is the corn reference price of \$3.70 per bushel. On the price side, one year (2009-10) is replaced with the plug price of \$3.70/bu. On the yield side, one year (2012-13) is replaced with the plug yield of 126 bpa. For the price Olympic average, we drop the minimum of \$3.70 (2009-10) and the maximum of \$6.89 (2012-13), and average the remaining three (\$5.18, \$6.22, \$4.60) to get an Olympic average price of \$5.33 per bushel. For yield, we drop the minimum of 126 (2012-13) and the maximum of 178.8 (2013-14), and average the remaining three (177.0, 186.4, 174.6) to get an Olympic average yield of 179.3 bpa. Therefore, the county revenue benchmark is equal to \$5.33 Olympic average price x 179.3 Olympic average country yield, which equals \$955.67 per acre.

**TABLE:** U.S. Average Corn Price and Hypothetical County Yield



ARC-County will provide shallow loss coverage when the actual county revenue falls below 86 percent of the revenue benchmark. The maximum per acre payment is equal to 10 percent of the revenue benchmark, so coverage essentially extends from 86 percent down to 76 percent of the revenue benchmark. Using the above example, ARC-County would trigger program payment when the actual county revenue falls below \$821.88 and would pay a maximum of \$95.67 per acre (i.e., actual county revenue equals \$726.31).

For calculating the actual county revenue, the price cannot be below the loan rate, so the formula is the maximum of the U.S. marketing year average price or the commodity loan rate multiplied by the actual county average yield per acre (as reported by NASS). Note that for counties where both irrigated and non-irrigated yields are reported by the NASS, ARC-County will allow for separate benchmark and actual revenues. Also, the ARC-County program will pay out the payment per base acre for the program crop at an 85 percent rate, or 85 cents on the dollar.

The ARC-County program essentially is a county-level “revenue option” offered to farmers. The program payment basically will be triggered under three possible scenarios:

- Low U.S. average prices and low county yields
- Average U.S. prices and low county yields
- Average county yields and low average U.S. prices

Therefore, the correlation between the county-level yield and the U.S. marketing year average price is a major contributing factor to the frequency of program payments. In cases of a strong negative correlation between price and yield, the odds of a payout will be quite low due to the natural “hedge” effect between the yield and the price. If price and yield have a strong positive correlation, then the odds of a payout will be quite strong, as low prices will correspond to low yields and vice versa. Unfortunately, the laws of supply and demand tend to favor a negative correlation rather than a positive one for most agricultural commodities.

### ARC-INDIVIDUAL

ARC-Individual uses farm-level yields instead of county-level for calculating the five-year Olympic average yield in the benchmark revenue and for determining the yield for the actual revenue for each covered crop produced in a particular crop year. Producers can use 70 percent of the county T-yield as a plug in their five-year yield history. The U.S. marketing year average price is still used for the price component of revenue in both calculations and is calculated the same way as for ARC-County. To determine total farm level revenue, a weighted average of the per acre revenues is calculated where the weights are the relative percentages of total planted acres of covered crops allocated to the particular crop.

### EXAMPLE

*If a producer planted 60 percent of total acres to soybeans (benchmark revenue equals \$350 per acre) and 40 percent to corn (benchmark revenue equals \$650 per acre), the total farm benchmark revenue would equal  $(0.6 \times \$350) + (0.4 \times \$650)$ , which would equal a farm revenue benchmark of \$470 per acre. ARC-Individual would trigger program payments when the producer’s actual revenue fell below 86 percent of \$470, or approximately \$404, and would pay up to a maximum payment of \$47 per base acre (or 76% of \$470, which equals \$357 per base acre).*

*If the producer had actual revenue of \$300 for soybeans and \$400 for corn, the farm actual revenue would equal  $(0.6 \times \$300) + (0.4 \times \$400)$ , or \$340 per acre. In this case, it fell below the 76 percent threshold, so the producer would receive the maximum payment of \$47 per base acre of all covered crops. However, ARC-Individual pays out at a 65 percent rate (or 65 cents on the dollar), so the producer would receive a net payment of  $0.65 \times \$47$ , or \$30.55 per base acre.*

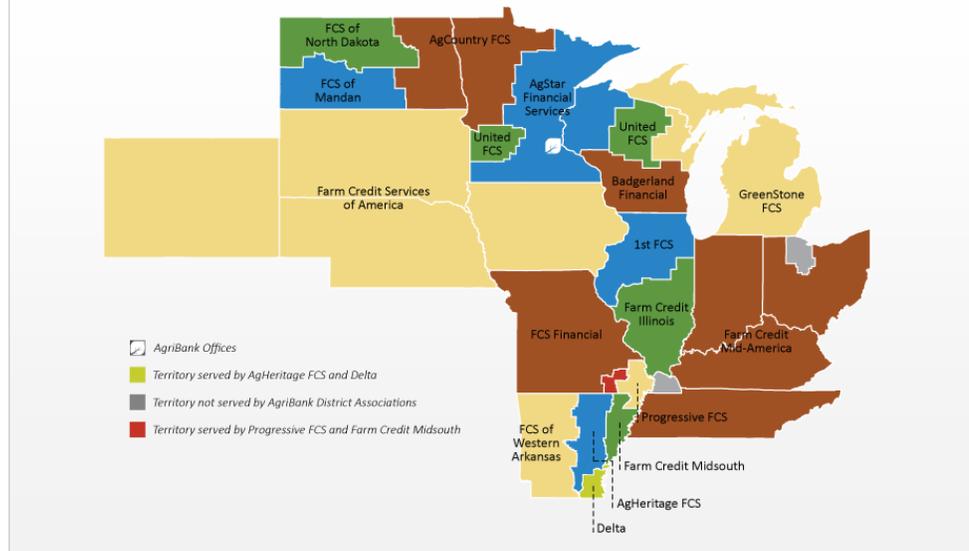
## For more information

The sign-up timetable for the 2014 commodity programs has yet to be determined by the U.S. Department of Agriculture but will likely be in late 2014 or early 2015.

Producers should carefully analyze their program choices based on their own farm operation characteristics and estimates of future prices and yields. The best way to evaluate the new commodity program options is to conduct a full analysis under a variety of historical and projected price and yield scenarios. As always, interaction of the producer's crop insurance and marketing plan choices with the commodity program alternatives is important to consider. Several university extension economists have created helpful models and tools to analyze this critical producer decision that, once made, cannot be reversed through the 2018-19 marketing year.

Local Farm Credit Associations also offer resources to help producers choose the appropriate commodity program. Find a local Association at [www.AgriBank.com](http://www.AgriBank.com).

## Associations in the AgriBank District



## About AgriBank

AgriBank is one of the largest banks within the national Farm Credit System, with more than \$85 billion in total assets. Under the Farm Credit System's cooperative structure, AgriBank is owned by 17 affiliated Farm Credit Associations. The AgriBank District covers America's Midwest, a 15-state area from Wyoming to Ohio and Minnesota to Arkansas. More than half of the nation's cropland is located within the AgriBank District, providing the Bank and its Association owners with exceptional expertise in production agriculture. For more information, visit [www.AgriBank.com](http://www.AgriBank.com).

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