New Programs in the 2014 Farm Bill:

Price Loss Coverage, Agricultural Risk Coverage and the Supplementary Coverage Options for Montana Farms and Ranches

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Introduction

The 2014 Agricultural Act was signed into law on February 17, 2014 by President Obama. The Act, widely referred to as the 2014 farm bill, introduces major changes in many aspects of U.S. farm programs that have important implications for farm owners and farm managers in Montana. Under the provisions of the 2014 farm bill, several long-standing farm programs related to farmers' risk management, which have been widely used by Montana farmers and ranchers, have been terminated or are being phased out, while several new programs have been introduced.

This paper identifies and briefly describes the major programs that have been terminated or are being phased out under the 2014 Agricultural Act, and then describes three important new programs for Montana farms and ranches. These include the new *Price Loss Coverage* (PLC) program and the new *Agricultural Risk Coverage* (ARC) program and a new insurance program called the *Supplementary Coverage Insurance Option* (SCO). Under PLC, payments to farmers are triggered by relatively low crop prices. Under ARC, payments to farmers are triggered by relatively low per acre crop revenues.

On a crop-by-crop basis, farmers are required to make a one-time decision for the entire duration of the 2014 Agricultural Act (which applies to the 2014–2018 crop years) about participation in the PLC or the ARC program. Farmers can elect ARC or PLC starting November 17, 2014, and must enroll before March 31, 2015 in order to qualify for payments. The decision they make will apply to crops harvested in the 2014 crop year as well in 2015, 2016, 2017 and 2018.

SCO coverage is available for crops enrolled in the PLC program but not for crops in ARC. Farm owners and farm managers in Montana will therefore have to make an important long-term decision about whether PLC or ARC is most likely to best serve their risk management needs for each crop they grow.

This policy issues paper provides examples of how the two programs operate and how government payments under each of the two programs may vary, depending on the future behavior of crop prices and, in the case of the ARC program, crop yields. The objective is to enable farmers to understand how the new programs work so that they can assess which of the two programs may be more beneficial for their operations.

It must be emphasized, as is illustrated in the examples presented here, that the effects of the programs depend on what happens to crop prices and, in the case of the ARC program, crop yields over the period 2014 to 2018. Farmers will have to make their own assessments about what may happen to crop prices in the future in determining which program will be most useful in the context of their risk and financial management strategies.

Farm Subsidy Programs to be Terminated or Phased Out

Under the provisions of the 2014 farm bill, several farm subsidy programs have been discontinued. These include the following programs that have been used by crop producers in Montana:

- The *Direct Payments Program*. This program was introduced in the 1996 farm bill and subsequently modified in 1998 and 2002. The program made fixed annual payments to producers that effectively were unrelated either to current market prices or the farm's current production decisions. Crops covered included wheat, corn, grain sorghum, barley, oats, upland cotton, rice, peanuts, soybeans, other oilseeds (including canola, sunflower, safflower, mustard seed, etc.), small and large chickpeas, dry peas, and lentils. Under this program, annual payments to each eligible person (no more than two per farm) were capped at $40,000 for farms that also participated in the Countercyclical Payments Program.

- The *Countercyclical Payments Program* (CCP). This program was introduced in the 2002 farm bill and made payments to producers of a wide range of crops when annual average prices for the current crop marketing year fell below predetermined trigger levels. CCP payments were also made on the basis of a farm's historically determined production of the crop, not the farm's current crop year production decision. Crops covered also included wheat, corn, grain sorghum, barley, oats, upland cotton, rice, peanuts, soybeans, other oilseeds (including canola, sunflower, safflower, mustard seed, etc.), small and large chickpeas, dry peas, and lentils. Under this program, annual payments to each

eligible person (no more than two per farm) were capped at $65,000.

- The *Average Crop Revenue Program* (ACRE). This program, introduced in the 2008 farm bill, made payments to farmers for the same set of crops covered by the CCP when, on a state wide basis, estimated current year per acre revenues for a crop fell sufficiently below their recent historical average levels. Payments, which would have mainly been driven by declines in crop prices, were capped at 25 percent of those recent per acre average revenue levels. The program was available for the same crops eligible for the CCP and farmers had to choose to participate in either the CCP or the ACRE program, and could not use the CCP for one crop and ACRE for another crop.

- The *Supplementary Revenue Assistance* crop disaster aid program (SURE). This program, also introduced in the 2008 farm bill, provided payments paid on shallow losses incurred on all acres planted to a crop in the current year. Producers were required to have crop insurance coverage to be eligible for SURE payments. Producers were only eligible for payments if their county or an adjacent county was declared to have experienced a disaster by the Secretary of Agriculture. Funding for the SURE program expired in 2011, but unlike disaster aid programs targeted for livestock losses and livestock forage losses, funding for the SURE program was not renewed under the provisions of the 2014 farm bill. Payments under this program were capped at $100,000 per year.

New Agricultural Crop Subsidy Programs

Several major new programs have been introduced in the 2014 farm bill. In addition, four disaster programs established by the 2008 farm bill, but under that Act only funded through the end of 2011, have now been reestablished and refunded for the next five crop years (the duration of the 2014 farm bill). These disaster aid programs provide farmers with compensation for drought- and fire-related livestock forage losses, excessive livestock mortality losses, damage to trees and orchards, and losses associated with farmed fish and bee colony collapse. The refunded livestock disaster aid programs (the intended duration of the 2014 farm bill provisions) are described in detail in another AMPC publication.[1] The major new programs included in the 2014 farm bill that are designed to provide income protection for farmers who raise crops in Montana are:

- The Price Loss Coverage Program (PLC);
- The Agricultural Risk Coverage program (ARC); and,
- The Supplementary Coverage Option insurance program (SCO).

PLC and ARC are available for the following commodities: wheat, corn, grain sorghum, barley, oats, long and medium grain rice, peanuts, soybeans, other oilseeds (including canola, sunflower, safflower, mustard seed, crambe, flaxseed, sesame seed and rapeseed), small and large chickpeas, dry peas, and lentils. These are the same commodities for which farmers received subsidies under the discontinued Direct Payment, CCP, and ACRE programs, with the exception of upland cotton, which is no longer a covered

commodity. SCO will be available for the 2015 crop year in select counties for barley, corn, soybeans, winter and spring wheat, sorghum, cotton, and rice, but will expand to other areas and crops in future years.

For each crop, producers must choose whether to participate in the PLC program or the ARC program. If the PLC program is elected for a crop, then the producer may also choose to obtain additional insurance coverage for the crop in the new SCO program.

If the ARC program is chosen for the crop, then the farm **cannot** purchase SCO coverage for that crop. The ARC program has two options: a producer can elect ARC-County (ARC-CO) which will issue payments based on county-wide yields for a crop or the producer can elect ARC-Individual Coverage (ARC-IC) which will issue payments based on the individual's yields for all crops on all farms enrolled in the ARC-IC program.

If the producer elects ARC-IC, the producer will receive payments on substantially fewer acres than if ARC-CO option is selected. In addition, if the producer elects to participate in ARC-IC, that election applies to all crops on the farm; the farm will not be allowed to enroll any crop in the PLC program.

Note that PLC and ARC are not insurance programs. Farmers do not have to pay any premiums to participate in either program. However, to be eligible they will be required to satisfy conservation compliance requirements, as was the case with the direct payments, CCP and ACRE programs.

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[1] The refunded livestock disaster aid programs are described and discussed in Montana State University Agricultural Marketing Policy Center Policy Paper #45, available at http://www.ampc.montana.edu/policypaper/policy45.pdf.

The Price Loss Coverage (PLC) Program

The **Price Loss Coverage program** has the following structure. A **reference price** is established in statute for each eligible commodity. If the crop's **effective price (**the higher of the **national average marketing year price (MYA)** for the crop, as reported by the USDA National Agriculture Statistical Service (NASS), or the National Loan Rate) falls below the **reference price**, the farmer receives a payment equal to the difference between the crop's **reference price** and the crop's **effective price** if the farm has base acres for the applicable crop. For example, suppose the reference price for wheat is $5.50 per bushel of wheat. If the effective price for the 2014 crop year is $5.00 per bushel, then the per bushel **price loss coverage payment** will be $0.50, the difference between effective price and the reference price for the crop ($5.50 - $5.00). Reference prices for all commodities covered under the PLC program are presented in table 1.

Table 1. Price Loss Coverage Reference Prices for Covered Commodities

Crop	Unit	Price Loss Coverage Reference Price
Wheat	bushel	$5.50
Barley	bushel	$4.95
Oats	bushel	$2.40
Corn	bushel	$3.70
Grain Sorghum	bushel	$3.95
Rice	cwt	$14.00
Minor Oilseeds	cwt	$20.15
Soybeans	bushel	$8.40
Peanuts	Ton	$535.00
Dry Peas	cwt	$11.00
Lentils	cwt	$19.97
Small Chickpeas	cwt	$19.04
Large Chickpeas	cwt	$21.54

Source: USDA

Under PLC, the payment acres for a farm are equal to 85% of the farm's base acres for the applicable crop. The base acres on a farm are equal to the farm's base acres that existed as of September 30, 2013, unless the base acres are reallocated during the reallocation period. The PLC payment is determined by multiplying the payment acres by the crop's yield on the farm and then multiplying the result by the payment rate as described above.

A PLC Example

Suppose a farm has 1,000 acres of wheat base and a payment yield for those base acres of 29 bushels per acre. The farm's PLC payment acres are made up of 850 acres of wheat (1000 x 85%). The farm will receive a total PLC payment equal to the per bushel price loss coverage payment, which is determined by the difference between the reference price of $5.50 and the effective price (the national average marketing year price of $5 reported by NASS ($0.50/bushel) on 85 percent of its base acres multiplied by the crop yield.

In this case, therefore, the example farm would receive a wheat PLC payment of $12,325 (85% x 1000 acres x 29 bushels per acre x $0.50/bushel).

PLC and ARC Base Acres and Base Yields

Under the provisions of the 2014 farm bill, agricultural landowners have the option of using the base acres and counter-cyclical (CC) yields that determined the subsidies they received under the Direct and Counter-Cyclical Program in the new PLC and ARC programs. For many farms in Montana, these base acres and base yields were established on the basis of the crop yields for, and base acres planted to, each eligible crop in the early and mid-1980s. Some farmers may have chosen to reallocate their base acres and update their yields in late 2002 under options provided to them in the 2002 farm bill.

However, under the 2014 farm bill, farm owners will have the option to reallocate their base acres using a proration of the four year average of planted and considered planted (P&CP) acres for the 2009

through 2012 crop years. An increase in the total number of base acres is not permitted.

Landowners are also provided the opportunity to update their PLC payment yields by certifying the annual average yields on planted acres over the *five-year period* of 2008-2012. Under the yield updating process, payment yields for each eligible crop will be set to 90 percent of the average yield for that crop on planted acres over the five year period 2008-2012.

Many farmers are likely to update their PLC payment yields to reflect the increases in their yields over the past thirty years. For example, in the mid-1980s, the national annual average per acre yield for corn was about 90 bushels. In recent years, national corn yields have averaged close to 160 bushels per acre. Farms that take advantage of yield updating for corn are therefore likely to increase the per acre PLC payment yield eligible for subsidy payments by an average of more than 60 percent, from about 90 bushels to about 145 bushels. Yields for many other crops have also increased substantially since the mid-1980s, perhaps making yield updating attractive for many farmers who plan to participate in the PLC.

The structure of the PLC is essentially identical to the structure of the CCP, for which it is a replacement. The only differences are (1) that the reference prices that will be used to trigger payments under PLC are much higher than those used under the CCP, and (2) the opportunity to update yields could result in significantly higher payments if the crop triggers. Table 2 compares the reference prices that would trigger payments under the CCP and PLC for selected crops.

Table 2. A comparison of the CCP effective trigger and PLC payment trigger prices

Commodity	CCP Effective Trigger Price	PLC Trigger Price	Percent Increase in PLC Payment Trigger Price[A]
Corn	$2.35/bu	$3.70/bu	57%
Wheat	$3.65/bu	$5.50/bu	53%
Soybeans	$5.56/bu	$8.40/bu	66%
Peanuts	$459/ton	$535/ton	17%
Rice	$8.15/cwt	$14/cwt	72%
Barley	$2.39/bu	$4.95/bu	107%

Source: USDA. CCP effective trigger is calculated as the CCP trigger minus the direct payment.

[A] The percent increase in the PLC payment trigger is computed by dividing the PLC trigger price by the CCP trigger price and converting the values to percentage increases.

The Agricultural Risk Coverage (ARC) Program

The *Agricultural Risk Coverage program* makes payments to farmers when, in the current year, the estimated average revenue per acre for a crop (the *current year crop yield* multiplied by the *national average marketing year price* for that crop) falls below 86 percent of the *estimated historical average per acre revenue* for the crop over the most recent five years.

The ARC program is more complex than the PLC program because, regardless of the ARC option selected by a farm, the revenue trigger for an ARC payment, the *revenue guarantee*, is likely to change from one year to the next.

The ARC County (ARC-CO) Option

The farmer has two options within the ARC program. In ARC-Individual (ARC-IC), payments are based on the farm's own current and historical yields for the crop. In ARC-County (ARC-CO), payments are based on current and historical average yields in the county in which the farm is located.[2]

If the farm chooses to base its ARC participation on county yields (ARC-CO), it will receive ARC payments on 85 percent of the farm's base acres for each crop enrolled in the program. In addition, the farm would be free to allocate other crops to either ARC-CO or the PLC program.

In ARC-CO, the historical average per acre revenue for the crop, called the crop's **benchmark revenue**, is computed as follows. First, a per acre historical Olympic average yield is computed using the higher of the historical county yield or 70% of the county transitional yield (T-Yield) over the previous five years. Second, a historical Olympic average price is computed using the higher of the MYA or the PLC reference price for the same previous five years.[3]

The **benchmark revenue** for the crop is calculated by multiplying the estimated historical average yield by the estimated historical average price. A detailed example of how the benchmark revenue is calculated for ARC-CO is presented in table 3.

The benchmark revenue for a crop is then multiplied by 86 percent to obtain the **agricultural risk coverage guarantee**.

The farmer receives a payment when the estimated per acre **actual crop revenue** for the current crop year, defined as the current crop year per acre yield multiplied by the national marketing year average price for the crop, is smaller than the applicable **agricultural risk coverage guarantee**.

The farmer is then paid the difference between the applicable **agricultural risk coverage guarantee** and the estimated **actual crop revenue** on each acre eligible for a payment under the program. On a per acre basis, the ARC payment is capped at ten percent of the **benchmark revenue** used to calculate the **agricultural risk coverage guarantee**.

To illustrate how the ARC-CO revenue guarantee works, consider the following example based on county-wide average yields for spring wheat in central Montana. In the example, we assume a measure of year-to-year variability in those yields, mainly associated with annual differences in weather conditions. In the example, annual county yields are presented in column 2 of table 3.

Column 3 of table 3 shows the national average marketing year prices for wheat reported by NASS for the years 2009 to 2013. The prices included in column 3 for the years 2014-2018 are the February 2014 USDA forecasts of national average wheat prices for those years.[4]

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[2] If the farm is split across multiple counties, the producer must choose one administrative county for the farm from the counties in which the farm resides.

[3] An Olympic yield (or price) average is computed by dropping the highest and lowest yield (price) values in the series and calculating the average of the remaining yield (price) values. Suppose, for example, that per acre yields over the past five years were 30, 20, 45, 36 and 27 bushels. The high and low yields (45 bushels and 20 bushels) would be dropped. The average of the remaining three yields – 30, 36, and 27 bushels – would then be computed to obtain the five year Olympic average for crop yields. In this example the five-year Olympic average for yields would be 31 bushels (= (30 + 36 + 27)/3).

[4] The USDA February 2014 Agricultural Projections to 2023 can be found at www.ers.gov/publications/oce-usda-agricultural-projections/. Alternative price projections are available from the Congressional Budget Office (CBO; www.cbo.gov) and the Food and Agriculture Policy Research Institute (FAPRI; http://www.fapri.iastate.edu).

Column 4 shows the prices used to compute the Olympic average price for each year from 2014 to 2018. In column 4, the NASS reported (or USDA February forecast) annual average price is used, unless the PLC wheat reference price is higher than the NASS price, in which case the PLC reference price is used.

For example, in 2009, NASS reported the marketing year average wheat price as $4.87 and so, in computing the Olympic average price for 2014, the NASS price is replaced by the PLC reference price of $5.50 per bushel. Similar substitutions are made for 2014-2018.

Column 5 shows the estimated five-year Olympic county average yield for wheat for each year over the period 2014-2018 and column 6 shows the estimated five-year Olympic average price for wheat over that period.

The estimated per acre **benchmark revenue** for each year from 2014-2018, computed by multiplying that year's county Olympic average yield by that year's estimated Olympic Average price, is reported in column 7 of table 3. Column 8 shows the ARC-CO **revenue guarantee** for the same years (where the **revenue guarantee** is computed as 86 percent of the ARC **benchmark revenue**).

The example shows that the estimated ARC-CO **benchmark revenue** (and therefore the ARC-CO **revenue guarantee**) changes each year between 2014 and 2018, ranging from a low of $166.47 in 2016 to a high of $193.04 in 2014. Those changes are mainly driven by the Olympic average price, which ranges from $5.50 per bushel in 2018 to $6.60 per bushel in 2014 and 2015. Olympic average yield ranges from 25.5 to 29.2 bushels an acre.

The farm receives an ARC-CO payment when the estimated per acre **actual crop revenue** in the current year is smaller than the ARC-CO **revenue guarantee** for that year. For the county, **actual crop** revenue, reported in column 8 of table 3, is calculated by multiplying the national average marketing year price by the county wide average yield for the current year (where both the prices and yields are those reported by NASS).

In the example, in years 2014, 2015, and 2017, as shown in column 9 of table 3, the estimated **actual crop revenue** is smaller than the ARC-CO **revenue guarantee** and so the farm receives an ARC-CO payment in each of those years. On a per acre basis, in any given year the ARC payment is capped at ten percent of the ARC **benchmark revenue** for that year. If the difference between the ARC-CO revenue guarantee and the estimated actual crop revenue (shown in column 10 of table 3) exceeds the payment cap (shown in column 11 of table 3) then the farmer receives only the revenue cap. This is the case in 2014 and 2015, which use relatively high national average prices in computing the Olympic average price. In 2017, the payment cap is not binding, and the farmer receives the actual difference between the ARC revenue guarantee and the estimated actual crop revenue on each eligible acre of $16.44.

The reason for the cap on both the ARC-IC and ARC-CO program payments is that the ARC program is intended to cover relatively shallow losses rather than all losses. The farm is expected to use yield or revenue products available through the federal crop insurance program to cover losses when either per acre yields or per acre revenues fall much below 75 percent of their expected levels for a crop covered by the ARC program.

In 2016 and 2018, the ARC-CO revenue guarantee is less than the current year county revenue, a result that occurs because current yields are relatively high and lower annual prices are used in the Olympic average price calculation in that year. So there are no ARC payments for those years.

Table 3. An Agricultural Risk Coverage County (ARC-CO) Spring Wheat Example for a Representative Montana County.

1	2	3	4	5	6	7	8	9	10	11	12
Year	County Average Yields (bu per acre)	National Average Marketing Year Price ($ per bushel)	Prices Relevant to Computing Wheat Price Olympic Average [A] ($ per bushel)	Yield Olympic Average [B] (bu per acre)	Price Olympic Average [B] ($ per bushel)	County Benchmark Revenue [C] ($ per acre)	County Revenue Guarantee [C] ($ per acre)	Current Year County Revenue [D] ($ per acre)	Difference Between County Revenue Guarantee and Current Year County revenue [D] ($ per acre)	ARC Payment Cap [E] ($ per acre)	ARC Per Acre Payment [E] ($ per acre)
2009	31	$4.87	$5.50					$148.54			
2010	37	$5.70	$5.70					$210.90			
2011	22	$7.24	$7.24					$155.66			
2012	27	$7.77	$7.77					$209.01			
2013	30	$6.87	$6.87					$206.04			
2014	28	$4.90	$5.50	29.2	6.60	$193.04	$166.01	$137.20	$28.81	$19.30	$19.30
2015	19	$4.35	$5.50	28.4	6.60	$187.53	$161.28	$82.65	$78.63	$18.75	$18.75
2016	35	$4.30	$5.50	25.5	6.54	$166.47	$143.16	$150.50	($7.34)	$16.65	$0.00
2017	29	$4.45	$5.50	28.4	5.96	$169.17	$145.49	$129.05	$16.44	$16.92	$16.44
2018	32	$4.60	$5.50	29.1	5.50	$160.05	$137.64	$147.20	($9.56)	$16.01	$0.00

Source: Authors.

Data on national average marketing year prices for 2009-2013 obtained from USDA. Yields are for a representative Montana county in which five-year average yields are expected to be 29 bushels per acre.

[A] Where NASS reports a national average price of less than the PLC reference price of $5.50/bu for wheat (shown in red in column 3), the PLC reference price replaces the price reported by NASS in column 4.
[B] Five-year Olympic averages for yields and prices are computed by dropping the highest and lowest values for the previous five years and using the remaining three observations. For example, county-wide average yields in the five years preceding 2014 were 31, 37, 22, 27, and 30 bushels per acre. Omitting the high and low values (22 and 37 bushels per acre), the remaining three values are 31, 27, and 30 bushels per acre, which result in a five year historical Olympic average yield for the county of 29 bushels per acre (reported in column 5). A similar method is used to compute the five-year Olympic averages for national average prices reported in column 6, using the price information in column 4.
[C] The **ARC benchmark revenue** reported in column 7 is calculated by multiplying the Olympic average yield (column 5) by the Olympic average price (column 6). The **ARC revenue guarantee** reported in column 8 is obtained by multiplying the **ARC benchmark revenue** by 86 percent (0.86).
[D] The estimated current year average county revenue per acre reported in column 9 is the current year yield (column 2) multiplied by the national average price as reported by NASS (column 3, and the difference between the **ARC revenue guarantee** and the current year county average revenue (column 8 minus column 9) is reported in column 10.
[E] In each year, the per acre **ARC payment** is capped at ten percent of the per acre **ARC benchmark revenue** for that year. The estimated payment cap for wheat in the county is presented in column 11. Thus, as shown in column 12, the farmer receives a per acre ARC payment that equals the cap if the difference between the **ARC revenue guarantee** and the estimated current year county revenue per acre exceeds the cap. This is the case in 2014, 2015. Otherwise the farmer receives the difference between the **ARC revenue guarantee** and the estimated current year county revenue per acre, as in 2017. If the county revenue exceeds the **ARC revenue guarantee**, as in 2016, the per acre **ARC payment** will be $0.00. (Note that there would still be a PLC payment in this year, as the National Average Marketing Year Price is below $5.50/bu.)

The ARC Individual (ARC-IC) Option

ARC-IC payments are calculated similarly to ARC-CO payments, with the following exceptions:

1. If the farm chooses ARC-IC, it will receive ARC payments on only 65 percent of the farm's base acres for that crop. In addition, the farm will also have to enroll all of its crops in the ARC program.

2. In ARC-IC, the benchmark revenue is calculated as the five-year Olympic average of revenues for each covered crop, using base yields and base acres from the farm, and prices that are determined in the same way as for ARC-CO; revenues are computed using the higher of the MYA or PLC reference price.

The ARC-IC option may be attractive to growers with farm yields (and therefore the ARC-IC cap) that are on average substantially higher than the county yield, to make up for the fact that payments are made on twenty percent fewer acres under the ARC-IC option.

Farmers whose proportional variation in yields is uncorrelated and/or much more variable than county yields may also benefit from ARC-IC.

Comparing PLC and ARC-CO Payments on a Per Acre Basis

Table 4 compares the payments that would be made on a per acre basis from 2014 to 2018 under the PLC and ARC-CO programs, assuming that the February, 2014 USDA forecasts of wheat prices hold. Table 5 shows what payments would be under each of the programs if national average marketing year wheat prices are 50 cents per bushel (about 12 percent) higher than the USDA February 2014 forecasts. Table 6 shows what those payments would be if wheat prices are one dollar (24 percent) higher than the USDA forecasts. The PLC estimates are based on the assumption that the farm's PLC average yield is identical to the county average yield of 29 bushels and that any payments made are based on 90 percent of that per acre average yield (as required in the PLC program).

Table 4. Comparison of ARC-CO and PLC Per acre Payments, Assuming USDA February 2014 Forecasts of the National Average Marketing Year Prices for Wheat

Year	National Average Marketing Year Price	ARC Revenue Guarantee	County Average Revenue	ARC per Acre Payment	PLC Reference Price	PLC Payment per Bushel	PLC Payment per Acre
	($ per bushel)	($ per acre)	($ per acre)	($ per acre)	($ per bushel)	($ per bushel)	($ per acre)
2014	$4.90	$166.01	$137.20	$19.30	$5.50	$0.60	$15.66
2015	$4.35	$161.28	$82.65	$18.75	$5.50	$1.15	$30.02
2016	$4.30	$143.16	$150.50	$0.00	$5.50	$1.20	$31.32
2017	$4.45	$145.49	$129.05	$16.44	$5.50	$1.05	$27.41
2018	$4.60	$137.64	$147.20	$0.00	$6.50	$0.90	$23.49

It must be emphasized that the comparisons in tables 4-6 are only illustrative. However, they do provide useful insights about how the ARC and PLC programs may work. In table 4, prices for wheat in 2014-2018 are assumed to be much lower than over the period 2009-2013, as shown in table 3. During this time period, the ARC revenue guarantee ranges from $137.64 to $166.01, and while the per acre ARC payments are relatively stable for the years that they occur, there are no ARC payments for two of the five years. In this example, PLC payments per acre are, on average, higher, than ARC payments. Because PLC payments are not tied to yield, farms receive a payment under PLC in 2016 when yield is high but the Olympic average price is still under the PLC reference price. Farms also receive a PLC payment in 2018 when yield is close to average, but prices have been consistently low, bringing down the Olympic average used in the ARC revenue guarantee such that there is no ARC payment. The PLC payment is only lower than the ARC payment in 2014, when the average marketing year price is highest out of the five years, 2014-2018. In all other years, because prices are low, PLC payments per acre are relatively large and exceed ARC payments, which are tied to Olympic average prices that are falling over that period (and yields that remain relatively constant).

When national average marketing year prices are assumed to be higher (12 percent higher in table 5 and 24 percent higher in table 6), the ARC payment becomes much more volatile from one year to the next and, on average, is much lower. In table 5, when the national average price of wheat is $0.50 higher, the ARC payment is zero in 2016 and 2018 (as in Table 4), only $1.94 per acre in 2017, and reaches its cap only in 2015 when the current year county revenue is especially low (most likely because of severe drought). PLC payments also fall substantially, although they

still exceed ARC payments in every year except 2014 and 2015.

Under the highest price scenario presented in table 6 (where national average prices for wheat are assumed to be one dollar higher than the USDA February 2014 price forecasts), per acre ARC payments are zero in 2016, 2017, and 2018, only $0.81 in 2014, but remain capped at their maximum level in 2015 (when county-wide yields are very low). ARC payments are on average greater than PLC payments over the five years, even though ARC only exceeds PLC in 2015, when the ARC payment is capped and the per acre PLC payment is $3.92, and in 2014 when there is no PLC payment.

Implications

While tables 3–6 are only examples, they illustrate that the size of benefits from either program, as well as comparisons across programs, will depend on many unknown factors. These examples highlight a key issue that farm and ranch managers must consider in making their decisions about whether to enroll a crop in the ARC or PLC program. What happens to future prices and yields for a commodity over the period 2014 to 2018 (the five crop years covered by the provisions of 2014 farm bill) will heavily affect whether ARC or PLC provides greater benefits. Prices during that time will determine the size of the PLC payout. Historic and future national average prices and county yields will determine the size of the ARC-CO payment. Historic and future national average prices as well as historic and future farm yields will determine the size of the ARC-IC payment.

Table 5. Comparison of ARC-CO and PLC Per Acre Payments, Assuming National Average Marketing Year Wheat Prices are 50 Cents per Bushel Higher than the USDA February 2014 Forecasts

Year	National Average Marketing Year Price	ARC Revenue Guarantee	County Average Revenue	ARC per Acre Payment	PLC Reference Price	PLC Payment per Bushel	PLC Payment per Acre
	($ per bushel)	($ per acre)	($ per acre)	($ per acre)	($ per bushel)	($ per bushel)	($ per acre)
2014	$5.40	$166.01	$151.20	$14.81	$5.50	$0.10	$2.61
2015	$4.85	$161.28	$92.15	$18.75	$5.50	$0.65	$16.97
2016	$4.80	$143.16	$168.00	$0.00	$5.50	$0.70	$18.27
2017	$4.95	$145.49	$143.55	$1.94	$5.50	$0.55	$14.36
2018	$5.10	$137.64	$163.20	$0.00	$6.50	$0.40	$10.44

Source: Authors.

In the PLC example, the farm is assumed to have established a PLC average yield of 29 bushels per acre over the period 2008-2012, resulting in a PLC per acre payment yield of 26.1 bushels per acre (90 percent of its PLC average yield). The payment per bushel is calculated based on payment yield.

Table 6. Comparison of ARC-CO and PLC Per acre Payments, Assuming National Average Marketing Year Wheat Prices are $1 per Bushel Higher than the USDA February 2014 Forecasts

Year	National Average Marketing Year Price	ARC Revenue Guarantee	County Average Revenue	ARC per Acre Payment	PLC Reference Price	PLC Payment per Bushel	PLC Payment per Acre
	($ per bushel)	($ per acre)	($ per acre)	($ per acre)	($ per bushel)	($ per bushel)	($ per acre)
2014	$5.90	$166.01	$165.20	$0.81	$5.50	$0.00	$0.00
2015	$5.35	$162.91	$101.65	$18.94	$5.50	$0.15	$3.92
2016	$5.30	$146.08	$185.50	$0.00	$5.50	$0.20	$5.22
2017	$5.45	$148.74	$158.05	$0.00	$5.50	$0.05	$1.31
2018	$5.60	$140.98	$179.20	$0.00	$6.50	$0.00	$0.00

Source: Authors.

In the PLC example, the farm is assumed to have established a PLC average yield of 29 bushels per acre over the period 2008-2012, resulting in a PLC per acre payment yield of 26.1 bushels per acre (90 percent of its PLC average yield). The payment per bushel is calculated based on payment yield.

If the price of a crop is expected to be substantially lower than the PLC reference price over that period then it is quite likely that the PLC program will be relatively attractive. An additional incentive for PLC participation would be that all acres planted to that crop would be eligible for additional subsidized insurance coverage under the new Supplementary Coverage Option insurance program (discussed in the next section).

If, on the other hand, prices for the crop are expected to be relatively high, close to, or in excess of the PLC reference price, the ARC program may be more attractive. However, farm and ranch managers have to recognize that if the crop is enrolled in the ARC program, then it cannot be insured under the new SCO program. Of course, all acres of the crop can continue to be insured under existing RMA actual production history (APH) or group risk programs.

A final word of caution: in the above example, the farm is assumed to use the ARC-CO option (based on county yields) in making its decision about program participation. In that case, the farm would receive payments on 85 percent of its base acres of production of the crop. In addition, if the farm wanted to enroll a different crop (say barley or corn) in the PLC program and also purchase additional coverage for that crop under the SCO, then it could do so. If the farm wanted to enroll the crop in the ARC-IC program (based on the farm's own yields), then all crops on the farm would have to be enrolled in that program; no crops could be enrolled in the PLC or SCO programs; and ARC payments would be made on only 65 percent of the farm's base acres for each eligible crop.

The Supplementary Coverage Option (SCO)

The SCO is an insurance product that allows farmers to obtain coverage through a group-based area yield or revenue insurance product for shallow losses. It will be available for crops enrolled in the PLC program but not for crops enrolled in the ARC program. The program will not be implemented until the 2015 crop year.

Under the SCO, farmers have the option of purchasing an area yield or area revenue product that will pay them an indemnity when, at the county level, either average yields (in the case of the county yield product) or average revenues per acre (in the case of the county revenue product) fall below 86 percent of their expected levels. The expected county average yield or average revenue per acre will be determined by the USDA Risk Management Agency (RMA). Coverage will be capped at the difference between 86 percent of the expected area yield or revenue and the level of coverage selected by the farm under an underlying federally subsidized insurance contract.

For example, a farm that typically uses an Actual Production History (APH) insurance product based on the farm's own yield history may select a coverage level of 75 percent for on-farm yield losses, meaning that it will only receive an indemnity under that contract when the farm's actual yields or revenues fall below 75 percent of their expected level.

In that case, the farm can use an SCO insurance contract where payments for losses are capped at 11 percent (the difference between 86 percent and the farm's selected 75 percent coverage level for its underlying insurance contract).

The farmer is required to pay only 35 percent of the actuarially fair premium for an SCO contract, where the actuarially fair premium is the expected average annual indemnity payment. The federal government will pay all administrative costs and the remaining 65 percent of the actuarially fair premium.

Every acre planted to a crop can be covered under an SCO as long as those acres are also covered under a standard federal agricultural insurance contract (for example, an APH yield or revenue contract or a standard county-based group revenue or yield contract). However, SCO will only be available for the 2015 crop year in select counties for spring barley, corn, soybeans, wheat, sorghum, cotton, and rice, but will expand to other areas and crops in future years.

At this time (August 2014), RMA has not yet developed and published SCO insurance premium rates for crops produced in 2015. The 2014 Agricultural Act requires RMA to offer the SCO for the 2015 crop year, but in 2015 it will only be available for select crops and counties, and will be expanded in later years. Winter wheat planted in the fall of 2014 and harvested in 2015 will be the first crop for which the SCO option will be offered. Premium rates for that crop are now available.[5] SCO premium rates for other crops will be released later.

Summary

The 2014 Agricultural Act provides farmers with important new programs for a range of crops that have previously been eligible for government payments under the Direct and Counter-Cyclical Program (DCP) and the Average Crop Revenue Election (ACRE) program, all of which have been discontinued. These new programs are the Price Loss Coverage (PLC) Program, the Agricultural Risk Coverage (ARC) Program and the Supplementary Coverage Option insurance (SCO) program. Farmers may enroll different crops in either the PLC or ARC-CO program, but all crops on the farm must be enrolled in ARC if individual coverage (ARC-IC) is elected. If the PLC option is elected for a crop then the farmer may also use the SCO program for that crop, but if the ARC program is elected then the farmer cannot also use the SCO program for that crop, regardless of the ARC option that is selected.

The examples presented above highlight a key issue that farm and ranch managers must consider in making their decisions about whether to enroll a crop in the ARC or PLC program. What happens to future prices for a commodity over the period 2014 to 2018 (the five crop years covered by the provisions of 2014 farm bill) will heavily affect the payments received for a given crop. If prices for a crop are expected to be substantially lower than the PLC reference price over that period then, for that crop, the PLC program may be relatively attractive to many producers. An additional incentive for PLC participation would be that all acres planted to that crop would be eligible for additional subsidized insurance coverage under the new Supplementary Coverage Option insurance program.

If, on the other hand, prices for the crop are expected to be relatively high, close to, or in excess of the PLC reference price, the ARC program may be more attractive. However, farm and ranch managers have to recognize that if the crop is enrolled in the ARC program, then it cannot be insured under the new SCO program. Of course, all acres of the crop can continue to be insured under existing RMA actual production history (APH) or group risk programs.

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[5] SCO premiums for winter wheat can be computed at http://prodwebnlb.rma.usda.gov/apps/CIDT/.

Online Resources:

For more information, visit MSU Extension's farm bill website at www.montana.edu/farmbill, the Farm Service Agency (FSA) National Farm Bill website at www.fsa.usda.gov/farmbill, Montana FSA's website at www.fsa.usda.gov/mt and Risk Management Agency (RMA) national Farm Bill website at www.rma.usda.gov/news/currentissues/farmbill.