Crop Subsidy and Crop Insurance for Wyoming Farmers in a New 2013/14 Farm Bill

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This publication was developed with financial support from the Risk Management Agency USDA and the University of Wyoming.

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Agricultural Marketing Policy Paper No. 40
July 2013

Introduction

Farm policy is in flux and the future of many farm subsidy programs is in question. In Congress, the Senate Agriculture Committee (and the entire Senate) and the House Agriculture Committee have recently developed alternative farm bill proposals. While the two bills include some very similar or identical proposals, they also contain some very different initiatives. Those differences would normally be resolved through a conference process within a joint House and Senate Agricultural Committee conference committee.

However, at this time, nothing is certain about the future of farm subsidies, most importantly because the House Agricultural Committee's 2013 farm bill (called the *Federal Agriculture Reform and Risk Management* Act) was rejected by the whole House of Representatives by a margin of 234 no votes to 195 yes votes on June 20, 1013. The voting was not along strict party lines: the 234 no votes include votes by 62 republicans and the 195 yes votes included votes by 24 democrats. In contrast, the Senate version of a 2013 farm bill (called the *Agriculture Reform Food and Jobs Act*) was approved on June 9, 2013 with substantial bi-partisan support on a 66 to 27 vote, with seven abstentions and absences.

Nevertheless, it is useful for all farm and ranch managers to understand the structure of the types of new crop subsidy programs included the 2013 farm bills proposed by the House and Senate Agricultural Committees and how those programs may be linked to, and influence a farm's participation in the federal crop insurance program. The reason is that any new jointly approved farm bill is likely to include important changes to commodity price and income support policies (widely known as Title I programs). It is also likely to include a new type of subsidized crop insurance program and the termination of the Direct Payments, Countercyclical Payments and Average Crop Revenue (ACRE) programs. Proposals to terminate these three programs were included in both the 2012 and 2013 farm bills put forward by the Senate and House Agriculture Committees. These programs may be replaced by new price, income and crop insurance programs, although the structure of the new programs included in the House and Senate Agriculture Committee bills differ in important ways.

The starting point for this analysis is the potential role of conservation compliance requirements, which were first introduced for farms with highly erodible land enrolled in most USDA Farm Service Agency programs in 1985. Next, the structures of two new commodity-related farm programs are described. These programs – a shallow loss program proposed in the Senate Bill called Agricultural Risk Coverage (ARC) and a new price support program proposed in the House Agricultural Committee called Price Loss Coverage (PLC) – have received considerable support from agricultural commodity groups. While there would be no formal link between these programs and the federal crop insurance program, their impacts on farm revenues could affect a farm's federal crop insurance decisions.

Both the House and Senate 2013 farm bill proposals also include similar provisions for a new federally subsidized insurance program, the Supplementary Insurance Coverage Option (SCO). This program provides an area based supplementary policy intended to provide additional coverage associated with what is called the deductible in other coverage offered by farm specific RMA policies. The

supplementary coverage for a crop under the SCO requires and is tied to the farm's purchase of federal crop insurance coverage for what are now called "deep losses" under a farm specific Common Crop (COMBO yield or revenue) policy or an Area Risk Protection Insurance (ARPI) policy. This policy issues paper describes the SCO and gives examples of how, for a crop, the coverage levels allowed under the SCO are linked to the farm's decision about the coverage level obtained under either a COMBO or ARPI policy.

Conservation Compliance and Participation in the Federal Crop Insurance Program

Currently, farms are not obligated to file a conservation plan with the Farm Service Agency when they purchase a federal crop insurance product. However, a farm with highly erodible land may have been required filed such a plan because the farm participates in other subsidy programs such as the Loan Rate, Direct and Countercyclical Payments (DCP), and Average Crop Revenue (ACRE) programs managed by the USDA Farm Service Agency (FSA).

Under the Senate Bill, as amended in debate on the Senate floor, that would no longer be the case. A farm that purchased federal crop insurance would be required to develop and file a conservation compliance plan with the USDA FSA. Many farms that purchase federal crop insurance products are already in compliance with the conservation requirements identified in the Senate Bill because they do participate in USDA FSA programs such as DCP and ACRE. These farms would not face any additional compliance requirements. Farms that have not previously had to meet conservation compliance requirements would be given a five year period in which to meet such requirements (S.954. *The Agricultural Reform, Food and Jobs Act;* section 2609).

Shallow Loss Farm Subsidy Programs: The Agricultural Risk Coverage Program

In various forms, shallow loss programs have been proposed by many farm groups and legislators.[1] The Senate 2013 farm bill includes such a program, called the Agricultural Risk Coverage (ARC) program. The ARC program, or other shallow loss programs that do not involve insurance products, would be administered by the USDA Farm Service Agency (FSA).

Shallow loss programs are designed to provide farmers with subsidies when per acre revenues fall moderately below recent historical average levels. On a per acre basis, however, subsidies are limited to a relatively small percentage of recent historical average revenues. This is because farms are assumed to have access to federal crop insurance products (COMBO or Area Risk Protection Insurance (APRI) policies) to cover deeper losses.[2] However, farms are not required to purchase a federal crop insurance product to be eligible for a shallow loss program subsidy, although they would be

[1] The paper *Assessment and Comparison of Farm Safety Net Proposals* by Professor Carl Zulauf, October 2011has a useful description of several legislative and farm interest group shallow loss proposals, available at http://aede.osu.edu/publications.

[2] APRI policies are area based policies and will be available for the 2014 crop year. APRI combines the Group Risk Plan (GRP) and the Group Risk Income Protection (GRIP) Plan on one general policy. GRP and GRIP will not be offered in 2014.

required to meet conservation compliance provisions.

Shallow loss programs can be based on area-wide crop yields; for example, at the state, county or crop reporting district level. The ACRE program, introduced in the 2008 farm bill, is an example of a shallow loss program based on state wide yields. Alternatively, a shallow loss program can be based on the individual farm's yields for a crop. The Senate ARC program would allow a farm to choose either a county yield based program or a farm yield based program, but the farm must use the same approach for all eligible crops (that is, a farm planting wheat and barley cannot choose county yields for barley and farm yields for wheat).

The structure of the ARC shallow loss program in the 2013 Senate farm bill proposal is worth a detailed examination, especially because its key features are similar to those of other proposed shallow loss programs. The ARC shallow loss program's structure is as follows:

- The **expected per acre revenue** for each crop for the current crop year is established at either the farm level or the county level using a five year Olympic Average procedure.

  If the farm chooses to use its own yields (the yields the farm reports to the USDA Risk Management Agency for crop insurance purposes unless such yields are not available), then the annual per acre revenue for each of the previous five years is computed by multiplying the farm's yield in each year by the national average price for the crop in that year as reported by the USDA National Agricultural Statistical Service (NASS). If the county yield option is chosen by the farm, county average yields for each of the previous five years are used instead of the farm's yields.

  The Olympic average per acre revenue is then calculated by dropping the highest and lowest estimated per acre revenues and using the estimates for the remaining three years to compute the expected per acre revenue for the current crop year.

  How the **expected per acre revenue** would be calculated for spring wheat is illustrated for an example farm, where the farm opts to use its own yields (Table 1). Per acre revenues for each year (column 3) are estimated by multiplying the NASS marketing year price (column 1) by the farm's realized yield (column 2). The highest and lowest estimated per acre revenues are then identified (column 4) and omitted (column 5). The remaining estimates (for 208, 210 and 2011 in column 5 of table 1) are then used to compute the farm's five year Olympic average per acre revenues for the crop of $282.39.

- A per acre revenue guarantee or payment trigger is then established. In the 2013 Senate ARC program, the **ARC revenue guarantee** is defined as 88 percent of the estimated five year Olympic average per acre revenue. For the example farm, using the farm's actual yield history, the **ARC revenue guarantee** would therefore be **$248.50 per acre** (0.88 x $282.39 per acre).

- The farm receives a payment, called the **Average Risk Coverage (ARC) payment**, if the farm's estimated **actual crop revenue** in the current year falls below its **ARC revenue guarantee**. The farm's **actual crop revenue** is defined as the per acre yield for the crop in the

Table 1: Computation of the Olympic Average Revenue Per Acre for an Example Farm

	Column 1	Column 2	Column 3	Column 4	Column 5
Year	National Average Price ($ per bushel) [A]	Farm's Per Acre Yield (bushels per acre)	Farm's estimated per acre revenue (column 1 x column 2)	Ranking of per acre estimated revenues	Olympic Average Observations [B]
2008	$6.78	35	$237.30		$237.30
2009	$4.87	17	$82.79	Lowest	Omitted
2010	$5.70	60	$342.00		$342.00
2011	$7.24	37	$267.88		$267.88
2012	$7.77	45	$349.65	Highest	Omitted
Five Year Olympic Average Revenue Per Acre					**$282.39**

[A] The prices reported in column 1 are the national average marketing year prices for wheat reported by USDA NASS. The 2013 Senate Bill mandates that these prices be used in computing ARC revenue guarantee and actual crop revenue estimates.

[B] The Olympic average is computed by summing the observations for 2008, 2010 and 2011 and dividing that sum by three.

current year (as reported to RMA) multiplied by the national average price for the crop in the current year.

For example, suppose that, because of moderate rainfall, in the current crop year the example farm's spring wheat average crop yield is 30 bushels per acre and the national average price for wheat from that crop year is $8 per bushel. Then the farm's **actual crop revenue** will be estimated as $240 per acre (30 bushels x $8.00 per bushel).

The farm will be eligible for an ARC payment because its **actual crop revenue** ($240 per acre) is less than its **ARC revenue guarantee** ($248.50). However, if the farm's average yield is 40 bushels per acre and the national average price is $8, then the farm's estimated **actual crop revenue** would be $320 per acre. In that case, because the farm's estimated actual crop revenue exceeds the farm's **ARC revenue guarantee**, the farm would not receive an ARC payment.

- When an **ARC payment** is available to the farm, the farm's per acre **payment rate** is determined by the difference between the farm's **ARC revenue guarantee** and its estimated **actual crop revenue**. If the example farm's **actual crop revenue** for spring wheat is $240 per acre, then the per acre payment rate would be as follows:

  Farm ARC per acre payment rate = **ARC Revenue Guarantee** – **Actual Crop Revenue** = $248.50 – $240.00 **= $8.50.**

- An important issue for farmers in making their decision about whether to use farm yields or county yields concerns the amount of acres on which an ARC payment would be made. The farm's total ARC payment for a crop would be based on the number of eligible acres that are planted to the crop in the current crop year.

For most farms in many years, all acres planted to a crop are likely to be eligible for an ARC payment. However, the proportion of those eligible acres on which an ARC payment would be made depends on the ARC yield option selected by the farm. If the farm yield option is selected, the farm would receive an ARC payment on 65 percent of those eligible acres, but if the county yield option is selected then the farm would receive an ARC payment on 80 percent of those eligible acres.

Suppose that the example farm plants 1,000 acres to spring wheat, all of which are eligible for an ARC payment. Also suppose that, by chance, the same ARC payment rate of $8.50 per acre is available for both the county and farm yield ARC options.

If the farm opted for a farm yield based ARC program then the farm's total ARC payment would be as follows:

Farm Total ARC payment = ARC payment rate x (0.65 x eligible planted acres) = $8.50 x 0.65 x 1,000 acres = $5,525.

If, however, the farm opted for a county yield based ARC program then the farm's total ARC payment would be as follows:

County Yield Total ARC payment = ARC payment rate x (0.80 x eligible planted acres) = $8.50 x 0.80 x 1,000 acres =$6,800.

Note that, for many reasons, it is very unlikely that the ARC county and farm yield programs would provide the same ARC payment rate in any given year. One is that in some years a county based ARC payment may not be available when a farm based ARC payment is available. The reason is that farm crop yields are typically considerably more variable than county average crop yields and, therefore, when ARC payments are based on farm yields they are likely to be available more often.[3]

Whether a county based or farmed based ARC program would provide larger payments over the long run therefore depends on each farm's specific circumstances. If a farm's yields are considerably more variable than the county average yield then it is more likely that, over the long run, the farm yield based ARC will provide more income protection than the county yield based ARC.

- The **ARC payment rate** is subject to a **payment rate cap** equal to 10 percent of the farm's estimated per acre five year **Olympic Average Revenue.** To see how the **payment rate cap** works, consider the example farm that has a farm based ARC estimated spring wheat **five year Olympic Average revenue of $282.39** and an **ARC revenue guarantee** of $248.50 per acre. The farm's spring wheat payment rate cap is therefore $28.24 per acre (10 percent of the **five year Olympic Average revenue** of $282.39, rounded to the nearest penny).

  If the farm has a current year crop yield of 30 bushels **per acre** and the national average spring wheat price is $8.00**,** then,

[3] Several research studies have looked at this issue and found that payments under an ARC farm based program are likely to occur more often than under an ARC county based program. See, for example, the monograph, *Field of schemes: The taxpayer and economic welfare costs of shallow-loss farming programs* by Vincent Smith, Bruce Babcock and Barry Goodwin (May 2012) available at http://www.aei.org/files/2012/05/29/-field-of-schemes-the-taxpayer-and-economic-welfare-costs-of-shallowloss-farming-programs_173428924992.pdf.

as shown above, the farm's estimated **ARC payment rate** would be $8.50 per acre, well below the farm's **payment cap** of $28.24. However, if the farm has a current year crop yield of 25 bushels per acre and the national average price is $8 per bushel, then the farm's estimated **Actual Crop Revenue** is $200 per acre ($8 x 25 bushels). In the absence of a payment cap, the farm's ARC Payment Rate would be:

ARC Revenue Guarantee – **Actual Crop Revenue** = $248.50 – $200 **= $48.50.**

However, this estimated payment rate of $48.50 per acre exceeds the payment rate cap and, therefore, the actual payment rate would be the farm's **payment rate cap** of $28.24 per acre.

ARC Program Eligible Planted Acres

An important issue with respect to the ARC that deserves attention concerns the number of planted acres for a crop that are eligible for an ARC payment. The details, as laid out in the 2013 Senate farm bill, are complex but are based on the following principles. Under the DCP and ACRE programs a farm has a total number of base acres. Under the ARC program in the 2013 Senate Bill, a farm cannot receive ARC payments for all eligible crops on more acres than the base acres the farm possesses.

For example, consider a farm has 1,500 acres of wheat base and 500 acres of barley base. Then the farm cannot receive ARC payments on more than 2,000 acres (the sum of the wheat and barley base acres). Suppose the farm plants 1,700 acres to wheat and 800 acres to barley (and has no other crops eligible for ARC payments), for a total of 2,500 acres planted to crops eligible for an ARC payment. If there is no ARC payment rate for barley, but a positive payment rate is available for wheat, then all of the 1,700 acres planted to wheat will be eligible for an ARC payment. Similarly, if a positive ARC payment rate is available for barley but not for wheat then all 500 acres planted to barley will be eligible for an ARC payment. However, if an ARC payment rate is available for both crops, then the farm can at most receive an ARC payment on 2,000 acres of wheat and barley (the farm's number of base acres).

There is a common sense rule the farm can use to decide which crop acres should be declared eligible for an ARC payment; go with the crop or crops with the largest per acre ARC payment rates. For the example farm, if the per acre payment for wheat is larger than the per acre payment rate barley, then all 1,700 acres planted to wheat should be declared eligible for the ARC payment and only 300 acres of barley should be declared eligible for the ARC payment. However, if the per acre payment for barley is larger than the per acre payment rate for wheat, then all 500 acres planted to barley should be declared eligible for an ARC payment and only 1,500 acres of wheat should be declared eligible for an ARC payment.

ARC Total Payment Caps

In the 2013 Senate Bill, total payments made under this program would be capped at $50,000 per eligible person or entity. Persons or entities with annual adjusted gross incomes in excess of $750,000 will not be eligible for any payments.

ARC Eligible Crops

All crops eligible for payment under the DCP and ACRE programs in 2012 would be eligible for the ARC program (with the possible exception of cotton, for which both the House and Senate Bills have a different program

called Stacked Income Protection (STAX)). These crops are:

- Wheat, barley and oats
- Grain sorghum and corn
- Rice (short/medium and long grain)
- Soybeans
- Minor oilseeds including canola, crambe, flaxseed, mustard seed, rapeseed, safflower, sesame seed and sunflower seed
- Peanuts
- Dry peas, lentils and small and large chickpeas (garbanzo beans).

The Price Loss Coverage (PLC) Program

In the June 2013 Senate bill, the ARC is the main Title I (commodity program) innovation. However, in the June 2013 House Agriculture Committee Bill, the Price Loss Coverage (PLC) program is the main Title I program innovation. [4] The PLC program would be administered by the USDA FSA.

In many respects, the PLC is similar to the current Countercyclical Payments Program. In the PLC, each eligible crop is assigned a price, called a **reference price**, and a PLC payment is available when the **national average market price for the crop**, as determined by the Secretary of Agriculture, is lower than the **reference price** for the crop.

In the PLC program, if the **national average market price** for the crop is higher than the **loan rate** for the crop then a PLC payment called the **payment rate** will be made on each eligible bushel (or pound) of the crop that will equal the difference between the **reference price** and the **national average price** for the crop. If the national average price for the crop is lower than the loan rate for the crop then PLC **payment rate** will equal the difference between the **reference price** and the **loan rate**.

In the current CCP program, a payment is available for a crop when the national twelve month annual average price for the crop (as reported USDA National Agricultural Statistical Service) is lower than the CCP **effective price** for the crop, where the effective price equals the difference between the target price and the direct payment for the crop. For example, the CCP target price for wheat in 2013 was $4.14 per bushel and the direct payment was $0.52 per bushel. Therefore, in 2014, the CCP effective price for wheat was $3.62 per bushel ($4.14 -$0.52).

The per bushel CCP payment is the difference between the **effective price** and the average market price for the crop if the average market price is higher than the loan rate. If the loan rate is higher than the market price, then (as under the PLC) the CCP per bushel payment is the difference between the CCP effective price and the loan rate.

PLC Reference Prices

The PLC program differs from the Countercyclical Payments (CCP) program in two important respects. First, the PLC reference prices are generally much higher than the effective prices offered under the CCP. The PLC reference prices and CCP effective prices for each eligible crop are presented in Table 2, along with the ratio of the PLC price to the CCP effective price (measured in percentages).

[4] The House Bill also includes a shallow loss program called the Revenue Loss Coverage (RLC) program as an option to the PLC, although the House shallow loss RLC program is less attractive to most farmers than the Senate ARC program. Similarly, the Senate Bill includes a less attractive version of the new House PLC program. The focus here therefore is on the Senate ARC shallow loss program and the House PLC program.

Table 2: Countercyclical Payment Effective Prices and Price Loss Coverage Reference Prices

Crop	Unit	Price Loss Coverage Reference Price	Countercyclical Payment Effective Price	Ratio of PLC Reference Price to CCP Effective Price (percent)
Wheat	bushel	$5.50	$3.62	152%
Barley	bushel	$4.95	$2.39	207%
Oats	bushel	$2.40	$1.65	145%
Corn	bushel	$3.70	$2.35	157%
Grain Sorghum	bushel	$3.95	$2.28	173%
Rice	cwt	$14.00	$8.15	172%
Minor Oilseeds	cwt	$20.15	$11.88	170%
Soybeans	bushel	$8.40	$5.56	151%
Peanuts	Ton	$535.00	$459.00	117%
Dry Peas	cwt	$11.00	$8.32	132%
Lentils	cwt	$19.97	$12.81	156%
Small Chickpeas	cwt	$19.04	$10.36	184%
Large Chickpeas	cwt	$21.54	$12.81	168%

For each crop, the PLC reference price is substantially higher than the CCP effective price and considerably closer to the market prices for most of the eligible crops over the period 2006 to 2012. Among the crops most widely planted in Wyoming, the PLC reference price for corn is 57 percent higher than the CCP effective price; for wheat, the PLC reference price is 52 percent higher; for grain sorghum, the PLC price is 73 percent higher; and for barley, the PLC reference price is more than double the CCP effective price (107 percent higher).

PLC Payments for an Individual Crop

The second difference between the PLC and CCP programs concerns how the total PLC payment would be determined. The total acres eligible for a PLC payment for a single covered crop will be the sum of two components: 85 percent of the total acres planted to the crop and 30 percent of the total acres approved as prevented from being planted to the crop in the current year.

The amount of the PLC payment for each eligible acre planted to a crop is determined by a farm's payment yield for a crop, where, with the exception of minor oilseeds (sunflower, safflower, canola, mustard seed, etc.), the payment yield for a crop is the farm's CCP program yield for that crop.

The per acre PLC payment will equal the farm's **PLC payment yield** for the crop multiplied by the **PLC payment rate** for the crop. The total PLC payment received by the farm will therefore equal 85 percent multiplied by the farm's **PLC payment yield** for the crop, the **PLC payment rate** for the crop, and the farm's **PLC payment acres** for the crop.

A PLC Crop Payment Example

Suppose the example farm plants 1,000 acres of spring wheat (with no prevented planting) and has a PLC payment yield of 25 bushels per acre (the farm's CCP payment yield for the crop). The Secretary of Agriculture determines that the national average market price for

wheat is $5.00 a bushel, fifty cents below the reference price for wheat of $5.50. Therefore, a PLC payment is available and, because the loan rate for wheat is $2.92 a bushel, the wheat crop PLC payment rate is as follows:

PLC Payment Rate = **PLC Reference Price** - **National Average Market Price** = $5.50 per bushel - $5.00 per bushel = $0.50 per bushel.

Therefore the farm's total spring wheat PLC payment will be as follows:

Total Spring Wheat PLC Payment = **PLC Payment Rate** x **PLC Payment Yield** x 0.85 PLC Payment Acres = $0.50 per bushel x 25 bushels x 0.85 x 1,000 acres =**$10,625.**

Limits on the Total Acres on which PLC Payments can be made for all Crops

Table 3: PLC Example Farm

Crop	Base Acres	Planted Acres
Wheat	1,000	1,400
Barley	600	400
Corn	400	700
Total Acres	**2,000**	**2,500**

If a PLC payment is available for both wheat and barley, but not corn, the example farm can obtain a PLC payment on all of the 1,800 acres planted to both wheat (1,400 acres) and barley (400 acres) even though the farm has a wheat base of only 1,000 acres. This is because the farm has a total of 2,000 base acres for all three crops.

If a PLC payment is available for wheat and corn but not barley, then even though a total of 2,100 acres has been planted to those two crops, the farm can only receive a PLC payment on 2,000 acres of the two crops. The farm therefore has to decide whether to take a payment on all of the 1,400 acres planted to wheat and only on 600 of the 700 acres planted to corn, or on 1,300 acres of wheat and all 700 acres of corn. A common sense rule would be to take the PLC payment on all 1,400 acres of wheat if the per acre PLC payment for wheat is larger than the per acre PLC payment for corn (and vice versa).

Similarly, if a PLC payment is available for all three crops, the farm can still only take a PLC payment on a total of 2,000 acres and would have to decide how to allocate the 2,000 acres between the three crops.[5]

Comparing the ARC and PLC Programs

It is conceivable that a new farm bill will allow farmers and ranchers to choose between an ARC and PLC type of program. This may be a challenging decision for many producers because the likely relative benefits of the two programs depend on what will happen to the prices of commodities eligible for the program in the future. For example, as shown in table 4, in 2012, market prices for wheat, barley and corn were well above their PLC reference prices. If a producer that raises those crops believes that national average prices for those commodities will remain at or close their levels in recent years for the foreseeable future, then she would not expect to obtain many (or any) benefits from the PLC program. However, if her farm level crop yields are highly variable, she could well receive substantial payments under the ARC shallow loss program even though crop prices remain relatively high. If a producer expects crop prices to return towards their longer run historical levels (for example, to $4.50 a bushel for wheat and $3.10 a bushel for corn), then the decision would become more complicated as both programs would provide substantial benefits.

[5] Under the CCP program, farms received payments on 85 percent of their historical base acres. CCP payments were in no substantial way tied to the current use of the land.

Table 4: National Annual Average Prices for Barley, Corn and Wheat ($ per bushel)

Year	Barley	Corn	Wheat
2000	$2.14	$1.86	$2.57
2001	$2.14	$1.89	$2.83
2002	$2.39	$2.13	$3.41
2003	$2.86	$2.27	$3.45
2004	$2.61	$2.47	$3.57
2005	$2.43	$1.96	$3.36
2006	$2.72	$2.28	$4.03
2007	$3.59	$3.39	$5.76
2008	$5.00	$4.78	$8.02
2009	$4.83	$3.75	$5.30
2010	$4.00	$3.83	$5.12
2011	$4.79	$6.02	$7.44
2012	$5.97	$6.67	$7.60
PLC Reference Price	**$4.95**	**$3.70**	**$5.50**

The Insurance Supplementary Coverage Option (SCO)

Both the 2013 House Agricultural Committee and Senate farm bill proposals include a new insurance option called the Supplementary Coverage Option (SCO). The SCO proposals in the two bills are very similar and it seems likely that an SCO will be introduced. Here, the SCO is described using the House Agricultural Committee Bill's version of the program. The SCO would be administered by the USDA Risk Management Agency and delivered by the private agricultural insurance companies that also deliver all other USDA RMA agricultural insurance policies.

An SCO policy can only be purchased for a crop if the farm has already purchased a standard or primary RMA insurance policy to cover "deep" crop losses. The primary policy can be either a COMBO (yield or revenue) policy based on the farm's Actual Production History (APH) for the crop or an APRI policy based on area yields, or per acre revenues for the crop (typically county average yields or revenues), or a whole farm insurance policy such as AGR or AGR-Lite.[6]

As described in detail in this section, the farm's coverage level decision with respect to the primary COMBO, APRI or whole farm insurance policy directly affects the structure of the SCO policy the farm is able to purchase. However, relatively few farms purchase RMA whole farm policies but many farms purchased COMBO policies. For example, in 2012, of all RMA wheat policies sold to farmers, over 99 percent were APH based COMBO policies, of which 72.5 percent of which were revenue policies and 26.5 percent were yield polices. The focus

[6] Descriptions of AGR and AGR-Lite are presented in Montana State University Agricultural Marketing Policy Center briefing paper #95, *AGR-Lite: An Option for Montana Producers* by Vincent H. Smith and James B. Johnson, published in April 2009 and available at www.ampc.montana.edu/briefings/briefing95.pdf A detailed description of the COMBO policy is available in Montana State University Agricultural Marketing Policy Center policy paper #39, *Risk Management Options Using the Common Crop (COMBO) Policy in Wyoming, An Irrigated Farm Example* by James B. Johnson, Vincent H. Smith, & John P. Hewlett, published in August, 2012 and available at www.ampc.montana.edu/policypaper/ampc36.pdf .

here will therefore be on the links between a farm's COMBO policy decisions and the available SCO coverage.

It will be useful to review some of the basic elements of APH revenue protection and yield protection insurance products for an individual crop.

Coverage levels and Deductibles in APH COMBO Insurance Plans

The farm selects a coverage level that determines the yield or revenue that triggers the payment of indemnities. Coverage levels can range for 50 percent of the farm's APH yield (for example, for catastrophic coverage) to as much as 85 percent in increments of 5 percentage points (50 percent, 55 percent, 60 percent, 65 percent, 70 percent, 75 percent, 80 percent and 85 percent). The two highest coverage levels are typically available for irrigated crops and for rain fed (dryland) crops in counties where rainfall is relatively reliable (for example for corn in Iowa counties). In semi-arid counties, like most counties in Wyoming and Montana, the maximum coverage level available for dryland crops is typically 75 percent.

The coverage level choice establishes the liability under the COMBO policy option selected by the farm. For example, under a COMBO yield protection plan, if a farm's APH barley yield is 50 bushels an acre and the farm selects a 70 percent coverage level, then the farm's payment yield will be 35 bushels an acre (50 bushels x 0.70). If the farm experiences an average barley yield of less than 35 bushels then it will receive an indemnity payment for the difference between the payment yield and the actual yield.

If, therefore, the example farm obtained a barley yield of 30 bushels an acre, then it would receive a per acre indemnity for five bushels of insured loss (the 35 bushel payment yield less the 30 bushel actual yield). Under a yield protection plan, the five bushels of loss covered by the insurance contract would be valued at a price determined when the yield protection contract was initiated at planting time.

However, the farm has actually produced only 30 bushels of barley per acre, 20 bushels less than its APH yield, which is viewed for insurance purposes as representing the average per acre barley yield the farm would expect to obtain. In effect, by selecting a 70 percent coverage level, the farm takes on responsibility for all losses that are less than 30 percent of its expected average yield,, which in this example are represented by the first 15 bushels of lost barley production (relative to the farm's expected APH barley yield of 50 bushels per acre). These 15 bushels of uninsured loss represent what is called the deductible associated with the crop insurance contract.

The SCO Contract

The purpose of the SCO is to provide the farm with additional coverage that will effectively reduce the deductible associated with the primary insurance contract. The structure of the SCO is as follows.

An SCO insurance policy is an area based insurance policy. To the greatest extent possible the SCO policy for a crop would be based on county yields and, in principle, will be similar to an APRI yield or revenue product (that is, similar to the 2013 Group Risk Plan based on county yields or 2013 Group Risk Income Protection plan based on county per acre revenues available to farmers in 2013).

SCO Yield Coverage Levels and Liabilities

The SCO provides a county payment yield trigger equal to 90 percent of the expected yield (or revenue) in the county where the expected county yield (or revenue) will be established by the USDA Risk Management Agency and will be identical for all producers of the crop in the county. A farmer may therefore purchase coverage that provides indemnities when county wide yields (or revenues) fall below 90 percent of their expected levels. However, indemnities for losses under the SCO are capped at the difference between the SCO payment yield and the coverage level for the crop selected by the farmer in the COMBO primary insurance contract multiplied by the expected county yield.

To understand how the SCO contract works, consider the example farm which insures its barley crop using a COMBO yield protection plan of insurance. The farm selects a 70 percent coverage level. Therefore, if the farm chooses to participate in an SCO contract area yield contract, the contract will indemnify the farm when county yields fall below 90 percent of their expected level and 70 percent of their expected level. If the average county yield falls below 70 percent of its expected level, then the maximum indemnity available to the farm will be capped at 20 percent of the county expected yield (the difference between the 90 percent SCO trigger and 70 percent of the county yield).

An Indemnity Example

The example farm is located in a county in which the expected county yield is 40 bushels per acre. The farm itself has an APH yield of 50 bushels per acre, indicating the farm typically has higher barley yields than other farms in the county. The farm selects a COMBO yield protection plan coverage level of 70 percent and also participates in the SCO insurance program.

Indemnity payments to the farm under the SCO will be triggered when the county wide average yield (as reported by the USDA National Agricultural Statistical Service) falls below 90 percent of its expected level of 40 bushels an acre; that is, when the county wide average yield is less than 36 bushels an acre (40 bushels per acre x 0.9). When there are SCO indemnifiable crop losses, those crop losses will be valued at the same price as crop losses under the COMBO yield protection plan.

However, the maximum crop loss on which the example farm can receive an indemnity is capped at the difference between 90 percent of the county expected yield and 70 percent of the county yield because the farm selects a coverage level of 70 percent for its primary barley crop insurance contract. Seventy percent of the county expected barley yield equals 28 bushels per acre (40 bushels per acre x 0.70). Thus the maximum SCO payment available to the farm in terms of barley is 8 bushels per insured acre (36 bushels – 28 bushels).

Consider the following four scenarios for county yields in which the RMA determined price for barley at which indemnifiable losses will be valued is $4.50 a bushel and the farm is assumed to have planted and insured 500 acres of barley:

1. The actual county average yield in the current crop year is 38 bushels per acre.
2. The actual county average yield in the current crop year is 31 bushels per acre.
3. The actual county average yield in the current crop year is 28 bushels per acre.
4. The actual county average yield in the current crop year is 22 bushels per acre.

In scenario 1, even though the current crop year per acre county yield for barley of 38 bushels is lower than its expected level of 40 bushels, it is still larger than the SCO 90 percent payment yield of 36 bushels that would trigger indemnity payments. So no indemnity will be paid to the farmer.

In scenario 2, the county average yield of 31 bushels per acre is lower than the county SCO 90 percent trigger yield of 36 bushels, but higher than 70% of the county expected yield of 28 bushels per acre. The farm will therefore be eligible for an SCO indemnity for a crop loss of 5 bushels per insured acre, the difference between the county SCO 90% county payment yield of 36 bushels per acre and the actual county yield of 31 bushels per acre. The per insured acre indemnity payment will therefore be $22 (5 bushels per acre x $4.50 per bushel) and the total indemnity paid to the farm under the SCO barley policy will $13,200 ($22 per acre x 600 acres).

In scenario 3, the county average yield of 28 bushels per acre is lower than the county SCO 90 percent trigger yield of 36 bushels, and exactly equal to 70% of the county expected yield (28 bushels per acre). The farm will therefore be eligible for a per acre SCO indemnity for a crop loss equal to the maximum possible amount of 8 bushels an acre, given the farm's selected coverage level of 70% in its COMBO yield protection plan policy. The per insured acre SCO indemnity payment will therefore be $36 (8 bushels per acre x $4.50 per bushel) and the total indemnity paid to the farm under the SCO barley policy will $21,600 ($36 per acre x 600 acres). This is the maximum indemnity the example farm can receive under the SCO policy.

In scenario 4, the county average yield of 22 bushels per acre is lower than the county SCO 90 percent trigger yield of 36 bushels, and also lower than 70% of the county expected yield (28 bushels per acre). The farm will therefore again only be eligible for a per acre SCO indemnity equal, in terms of bushels of barley, to the maximum possible crop loss of 8 bushels an acre, given the farm's selected coverage level of 70% in its COMBO yield protection plan policy. As in scenario 3, the per insured acre SCO indemnity payment will again be $36 (8 bushels per acre x $4.50 per bushel) and the total indemnity paid to the farm under the SCO barley policy will $21,600 ($36 per acre x 600 acres).

SCO Insurance Policy Premiums

Total premiums for all SCO policies would be required to cover expected indemnities and reasonable reserves, but not the administrative costs incurred by private insurance companies in the delivery of the policies. Those administrative costs would be covered by direct payments from the federal government to the private insurance companies. Effectively, therefore, the USDA Risk Management Agency (RMA) would be expected to develop actuarially fair premium rates for each SCO policy in the same way that RMA is expected to develop premium rates for all other products.

As with other federal crop insurance products, the cost of the SCO total premium would be shared by the federal government and the farmer. The farmer would pay 35 percent of the total premium and the government would pay the other 65 percent of the total premium.

For example, if the total premium for the example farm's SCO policy were $1,200, then the farmer would pay $420 of the total premium (0.35 x $1,200) and the government would pay the remaining $780 (0.65 x $1,200). The proposed government subsidy rate for the SCO is somewhat higher than the average

subsidy rate for COMBO yield protection and revenue protection plans when coverage levels exceed 70 percent.

The Impact of Different Primary Crop Insurance Policy Coverage levels on the Structure of the SCO.

Farms that obtained higher coverage levels in their primary (COMBO plan) policies have lower levels of coverage available to them under an SCO contract. Table 5 shows how the structure of the SCO policy in terms of liability (maximum indemnity) changes on per acre basis for the example farm. In the example, the expected county yield for barley is 40 bushels an acre, the farm's APH yield for barley is 50 bushels, and the price at which SCO barley yield losses are valued for indemnity purposes is $4.50 a bushel.

Table 5 shows how, in the farm's COMBO yield protection plan, the payment yield (the yield that triggers indemnities for losses) changes at each alternative coverage level (50 percent, 55 percent, 60 percent, 65 percent, 70 percent, 75 percent, 80 percent, and 85 percent). It also shows how, at the county level, the SCO per acre indemnity cap changes as the coverage level selected by the farm in its primary COMBO insurance policy changes.

At low selected coverage levels (for example 50 percent), the farm's payment yield that triggers indemnities under the COMBO yield protection plan is relatively low (25 bushels an acre), but it coverage under the SCO product, indicated by the payment cap of $72 an acre in column 7 of tab le 5, is quite substantial. As the farm's COMBO plan coverage level increases, its COMBO payment yield increases, indicating a higher level of coverage under the farm's primary insurance policy, but the farm's SCO payment cap and coverage level decreases. For example, at a 65 percent coverage level, the farm's COMBO payment yield is 33 bushels an acre but its SCO payment cap falls to $45 an acre. At an 85 percent coverage level (the maximum available), the farm's COMBO payment yield is 33 bushels an acre but its SCO payment cap falls to only $9 an acre.

This interface between the coverage available under the SCO and the coverage level selected by the farm in its primary crop insurance policy, along with differences in subsidy rates for higher levels of coverage in COMBO policies and the SCO policy may encourage some farms to alter their decisions about coverage levels under the primary crop insurance product. At the same time, the expanded protection provided by the SCO may encourage some farms that currently do not purchase any federal crop insurance coverage to participate in the program.

Table 5: Effects of COMBO Coverage Levels on SCO Per Acre Payment Caps

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
COMBO Coverage Level	**Farm COMBO Policy APH Yield**	**Farm COMBO Policy Payment Yield [A]**	**County Expected Yield**	**SCO Payment Yield**	**County Yield Multiplied by Selected COMBO Coverage Level**	**SCO Per Acre Payment Cap**
		(Column 1 x Column 2)		(Column 4 x 90 percent)	(Column 4 x Column 1)	(Column 7 - Column 6) x $4.50 per bushel
(percent)	(bushels per acre)	(bushels per acre)	(bushels per acre)	(bushels per acre)	(bushels per acre)	($ per acre)
50%	50	25	40	36	20	$72.00
55%	50	28	40	36	22	$63.00
60%	50	30	40	36	24	$54.00
65%	50	33	40	36	26	$45.00
70%	50	35	40	36	28	$36.00
75%	50	38	40	36	30	$27.00
80%	50	40	40	36	32	$18.00
85%	50	43	40	36	34	$9.00

[A] Payment yields under the COMBO policy are rounded to the nearest whole number.

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