

Federal Crop Insurance: Background

Dennis A. Shields Specialist in Agricultural Policy

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Summary

As part of the ongoing farm bill debate, Congress continues to review the effectiveness and operations of the federal crop insurance program as part of the farm safety net. This report describes the current federal crop insurance program as background for crop insurance provisions in House and Senate versions of the farm bill proposed in the 112th Congress (see CRS Report R42759, *Farm Safety Net Provisions in a 2012 Farm Bill: S. 3240 and H.R. 6083)*.

The federal crop insurance program began in 1938 when Congress authorized the Federal Crop Insurance Corporation. The current program, which is administered by the U.S. Department of Agriculture's Risk Management Agency (RMA), provides producers with risk management tools to address crop yield and/or revenue losses on their farms. In purchasing a policy, a producer growing an insurable crop selects a level of coverage and pays a portion of the premium—or none of it in the case of catastrophic coverage—which increases as the level of coverage rises. The federal government pays the rest of the premium (62%, on average, in 2012). Insurance policies are sold and completely serviced through 15 approved private insurance companies. The insurance companies' losses are reinsured by USDA, and their administrative and operating costs are reimbursed by the federal government (i.e., farmers do not pay delivery costs).

In 2012, federal crop insurance policies covered 282 million acres. Major crops are covered in most counties where they are grown. Four crops—corn, cotton, soybeans, and wheat—accounted for nearly three-quarters of total acres enrolled in crop insurance. Most crop insurance policies are either yield-based or revenue-based. For yield-based policies, a producer can receive an indemnity if there is a yield loss relative to the farmer's "normal" (historical) yield. Revenue-based policies protect against crop revenue loss resulting from declines in yield, price, or both. Other insurance products protect against losses in whole farm revenue (rather than just for an individual crop) or gross margins for livestock enterprises.

Government costs for crop insurance have increased substantially in recent years. After ranging between \$2.1 and \$3.9 billion during FY2000-FY2007, costs rose to \$7 billion in FY2009 as higher policy premiums from rising crop prices drove up premium subsidies to farmers and expense reimbursements (which are based on total premiums) to private insurance companies. Costs rose further to \$11.3 billion in FY2011 and \$14.1 billion in FY2012 when crop prices surged again and poor weather resulted in program losses.

Reimbursements and risk-sharing between USDA and private insurance companies are spelled out in a Standard Reinsurance Agreement (SRA), which plays a large role in determining program costs. In 2010, USDA renegotiated the SRA for the 2011 reinsurance year (which began July 1, 2010) to save money and make adjustments to improve program delivery.

In the coming years, outlays for crop insurance are expected to exceed commodity programs, making crop insurance a potential target for deficit reduction. Insurance companies, farm groups, and some Members of Congress are concerned that additional reductions in federal support will negatively impact the financial health of the industry and possibly jeopardize the delivery of crop insurance to farmers. A main goal is saving federal dollars without adversely affecting farmer participation, policy coverage, or industry interest in selling and servicing insurance products to farmers. From a farm policy standpoint, policymakers and observers alike remain concerned about how the crop insurance program interacts with farm commodity programs and whether together they provide a means for helping farmers deal with business risk at a cost that is acceptable to taxpayers.

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ongress continues to review the effectiveness and operations of the federal crop insurance program in preparation as part of the ongoing farm bill debate. For many farmers, crop insurance is the most important component of the farm safety net, given the breadth of commodity coverage and capability to reimburse producers for crop losses.

This report provides a primer on the federal crop insurance program. For a review of proposed changes to the crop insurance program, farm commodity programs, and disaster assistance, see CRS Report R42759, *Farm Safety Net Provisions in a 2012 Farm Bill: S. 3240 and H.R. 6083* and CRS Report R42813, *Federal Crop Insurance for Specialty Crops: Background and Legislative Proposals.*

Crop Insurance History

Farming is generally regarded as a financially risky enterprise. Most agricultural production is subject to the vagaries of weather, and the nature of agricultural supply and demand often results in volatile market prices. Farm financial risk, periods of low returns, and the importance of agriculture in the nation's economy during the early to mid-1900s led to the development of federal policies that financially supported farmers, primarily through commodity price mechanisms. Today's farm commodity policies—authorized in the 2008 farm bill—have their roots in the 1930s.¹

During the same era, Congress also first authorized federal crop insurance as an experiment to address the effects of the Great Depression and crop losses seen in the Dust Bowl. In 1938, the Federal Crop Insurance Corporation (FCIC) was created to carry out the program, which focused on major crops in major producing regions. The availability of federal crop insurance remained limited until passage of the Federal Crop Insurance Act of 1980 (P.L. 96-365), which expanded crop insurance to many more crops and regions of the country. Congress enhanced the crop insurance program, including greater subsidy levels, in 1994 and again in 2000 in order to encourage greater participation. The changes also expanded the role of the private sector in developing new products that would help farmers manage their risks.² Today, many banks, when making operating loans, require that farmers purchase crop insurance.

The federal crop insurance program is permanently authorized by the Federal Crop Insurance Act, as amended (7 U.S.C. 1501 et seq.). It is periodically modified, most recently in the 2008 farm bill (P.L. 110-246). Congress chose to revise the legislation in the 2008 farm bill to achieve budget savings and to supplement crop insurance with a permanent disaster payment program.³ The U.S. Department of Agriculture's (USDA's) Risk Management Agency (RMA) operates and manages the FCIC.

¹ For details on farm programs, see CRS Report RL34594, Farm Commodity Programs in the 2008 Farm Bill.

² For more on the history of federal crop insurance, see http://www.rma.usda.gov/aboutrma/what/history.html. Law citations are the Federal Crop Insurance Act of 1980 (P.L. 96-365), the Federal Crop Insurance Reform Act of 1994 (P.L. 103-354), and the Agriculture Risk Protection Act (ARPA) of 2000 (P.L. 106-224).

³ For more information, see CRS Report RL34207, *Crop Insurance and Disaster Assistance in the 2008 Farm Bill*, and CRS Report R40452, *A Whole-Farm Crop Disaster Program: Supplemental Revenue Assistance Payments (SURE)*.

Program Basics

The federal crop insurance program provides producers with risk management tools to address crop yield and/or revenue losses on their farms. Insurance policies are sold and completely serviced through 15 approved private insurance companies. Independent insurance agents are paid sales commissions by the companies. The insurance companies' losses are reinsured by USDA, and their administrative and operating costs are reimbursed by the federal government (see **Figure 1** and "Federal Program Costs," below).



Figure I. Federal Crop Insurance Program

Source: CRS, adapted from U.S. Department of Agriculture and industry sources.

In purchasing a policy, a producer growing an insurable crop selects a level of coverage and pays a portion of the premium, which increases as the level of coverage rises. The remainder of the premium is covered by the federal government (about 62% of total premium, on average, is paid by the government).⁴ In the case of catastrophic coverage, the government pays the full premium. In the absence of premium subsidies, farmer participation in the crop insurance program and/or purchased coverage levels would be lower. A major benefit for producers is the timely payment for crop losses (about 30 days after the farmer signs the claim form).

In 2012, crop insurance policies covered 282 million acres (**Figure 2**). Major crops are insurable in most counties where they are grown. Four crops—corn, cotton, soybeans, and wheat—accounted for nearly three quarters of total enrolled acres. For these major crops, a large share of plantings is covered by crop insurance: corn at 84% of plantings; cotton, 94%; soybeans, 84%; and wheat, 83%.



Figure 2. Insured Acres

Source: U.S. Department of Agriculture, Risk Management Agency.

Policies for less widely produced crops are available in primary growing areas. Examples include dry peas, blueberries, citrus, pumpkins, and walnuts. In total, policies are available for more than 100 crops (including coverage on a variety of fruit trees, nursery crops, pasture, rangeland, and forage).⁵ Many specialty crop producers depend on crop insurance as the only "safety net" for their operation, unlike field crop producers, who are also eligible for farm commodity program payments.⁶ Crop insurance covers about 75% of total area for selected specialty crops.⁷ For more

⁴ In practice, the crop insurance company bills the farmer for the producer's portion of the premium (i.e., excluding the government portion). The company then sends the entire producer-paid premium to RMA. When a producer files a claim and the company pays an indemnity, RMA reimburses the company in full for the loss. At the end of the reinsurance year, there is an annual settlement whereby the company's proportion of any underwriting gain or loss is determined and paid.

⁵ A complete list of 2012 crops is available at http://www.rma.usda.gov/policies/2012policy.html.

⁶ Carey Frick, "Frick: Not So Peachy," The State, May 26, 2010.

⁷ Federal Crop Insurance Corporation, *Report to Congress: Specialty Crop Report*, Washington, DC, November 2010, http://www.rma.usda.gov/pubs/2010/specialtycrop.pdf.

information, see CRS Report R42813, Federal Crop Insurance for Specialty Crops: Background and Legislative Proposals.

Crop insurance is not necessarily limited to crops; livestock coverage has recently become available. Relatively new or pilot programs protect livestock and dairy producers from loss of gross margin or price declines.⁸ Livestock producer can also insure against hay and forage losses through the Pasture, Rangeland, and Forage program, which uses a rainfall index or vegetative index to determine loss.⁹

The availability of crop insurance for a particular crop in a particular region is an administrative decision made by USDA. The decision is made on a crop-by-crop and county-by-county basis, based on farmer demand for coverage and the level of risk associated with the crop in the region, among other factors. In areas where a policy is not available, farmers may request that RMA expand the program to their county.¹⁰ The process usually starts with a pilot program in order for RMA to gain experience and test the program components before it becomes more widely available. Alternatively, a policy can be reviewed and later discontinued if it fails to perform at an acceptable level (e.g., low participation or high losses). RMA also regularly responds to requests from commodity organizations or industry representatives for enhancements to existing coverage, such as adding revenue coverage.

When crop insurance is not available, USDA's noninsured crop disaster assistance program (NAP) provides the equivalent of catastrophic coverage if purchased by the producer. To be eligible for a NAP payment, a producer first must apply for coverage under the program by the application closing date, which varies by crop, but is generally about 30 days prior to the final planting date for an annual crop. Like catastrophic crop insurance, NAP applicants pay an administrative fee (currently \$250 per crop). No premiums are required.¹¹

Current law requires that RMA strive for actuarial soundness for the entire federal crop insurance program (that is, indemnities should equal total premiums, including premium subsidies).¹² As a result, RMA must set premium rates to only cover expected losses and a reasonable reserve. The agency is also required to conduct periodic reviews of its rate-setting methodology, which sets premium rates according to the average historical rate of loss (e.g., if policies pay out 10% of their value, on average, then the rate should be 10%). Based on a review completed in July 2011, RMA adjusted its methodology for several major commodities to give more weight to recent years and to make other changes.¹³

⁸ For descriptions of Livestock Gross Margin (margin protection) and Livestock Risk Protection (price protection), see http://www.rma.usda.gov/livestock/.

⁹ For more information, see http://www.rma.usda.gov/policies/pasturerangeforage/. Also see Monte Vandeveer, *Pasture, Rangeland, and Forage Insurance: A Risk Management Tool for Hay and Livestock Producers*, University of Nebraska-Lincoln, October 2012, http://cropwatch.unl.edu/c/document_library/get_file?uuid=3f25e3ef-68d1-4489-a7dd-7daba3c2d385&groupId=1841&.pdf.

¹⁰ A producer may also request a written agreement, which is a document designed to provide crop insurance for insurable crops when coverage or rates are unavailable. See the FCIC "Written Agreement Handbook," http://www.rma.usda.gov/handbooks/24000/2013/24020.pdf.

¹¹ For more information on NAP, see the USDA fact sheet at http://fsa.usda.gov/Internet/FSA_File/nap09.pdf.

¹² U.S. Department of Agriculture, Risk Management Agency, http://www.rma.usda.gov/help/faq/basics.html.

¹³ For a detailed discussion, see U.S. Department of Agriculture, Risk Management Agency, *Premium Rate Adjustment*, November 2012, http://www.rma.usda.gov/news/2012/11/2013premiumrateadjustment.pdf.

Types of Insurance

Federal crop insurance policies are generally either yield-based or revenue-based. For most yieldbased policies, a producer can receive an indemnity if there is a yield loss relative to the farmer's "normal" (historical) yield. Revenue-based policies were developed after yield-based policies, in the mid-1990s, to protect against crop revenue loss resulting from declines in yield, price, or both. The most recent addition has been products that protect against losses in whole farm revenue rather than just for an individual crop.

These two basic forms—yield-based and revenue-based—are discussed below, followed by a brief explanation of whole farm insurance. The text boxes in this report entitled "Crop Insurance Examples: Yield-Based vs. Revenue-Based" and "Federal Crop Insurance: Range of Coverage and Policies" explain program operation within the two broad categories.

Nearly 1.2 million crop insurance policies were active in 2012, with revenue-based policies accounting for 71% of the total (**Figure 3**), and the remainder being yield-based policies. On a premium basis, revenue policies account for more than 80% of all policies.



Figure 3. Types of Crop Insurance Policies

Source: U.S. Department of Agriculture, Risk Management Agency.

Notes: When calculated by share of premiums paid, yield-based policies account for 12% of total policies and revenue-based policies account for 82%. Index and "Dollar" policies are included in yield-based total.

Yield-Based Insurance

When purchasing a crop insurance policy, a producer is assigned (1) a "normal" crop yield based on the producer's actual production history, and (2) a price for his commodity based on estimated market conditions. The producer can then select a percentage of his normal yield to be insured and a percentage of the price he wishes to receive when crop losses exceed the selected loss threshold. The level of crop yield coverage is viewed by farmers as a critical feature of crop insurance, and a major determinant of whether a farmer will purchase insurance.¹⁴

¹⁴ A number of university and Extension Service offices provide information to farmers when making crop insurance (continued...)

In determining what a normal production level is for an insurable farmer, USDA requires the producer to present actual annual crop yields (usually stated on a bushel-per-acre basis) for the last 4 to 10 years. The simple average of a producer's annual crop yield over this time period then serves as the producer's actual production history (APH). If a farmer does not have adequate records, he can be assigned a transition yield (T-yield) for each missing year of data, which is based on average county yields for the crop.

The most basic policy is called catastrophic (CAT) coverage. The premium for this level of coverage is completely subsidized by the federal government. The farmer pays an administrative fee for CAT coverage (\$300 per crop per county under the 2008 farm bill, up from \$100 previously), and in return can receive a payment on losses in excess of 50% of normal yield, equal to 55% of the estimated market price of the crop (called 50/55 coverage). Coverage levels that are higher than CAT are called "buy-up" or "additional" coverage.¹⁵ For an additional premium paid by the producer, and partially subsidized by the government, a producer can "buy up" the 50/55 catastrophic coverage to any equivalent level of coverage between 50/100 and 75/100 (i.e., up to 75% of "normal" crop yield and 100% of the estimated market price). In `limited areas, production can be insured up to the 85/100 level of coverage.

APH policies account for more than 90% of yield-based policies sold. The remaining policies, including the Group Risk Plan and Dollar Plan (see box), are not widely used but can be important for certain crops. Some of these policies use an area-wide index—county-level yield in the case of the Group Risk Plan—to measure losses.

Revenue-Based Insurance

Revenue insurance accounts for more than half of all crop insurance policies (**Figure 3**). It began in 1997 as a buy-up option on a pilot basis for major crops. By 2003, acreage under revenuebased insurance exceeded acreage covered by APH policies. Revenue insurance combines the production guarantee component of crop insurance with a price guarantee to create a target revenue guarantee. Under revenue insurance programs, participating producers are assigned a target level of revenue based on market prices for the commodity and the producer's yield history. A farmer who opts for revenue insurance can receive an indemnity payment when his actual farm revenue (crop-specific or entire farm, depending on the policy) falls below a certain percentage of the target level of revenue, regardless of whether the shortfall is caused by low prices or low production levels.

After years of development, USDA's Risk Management Agency issued the "COMBO" rule in late March 2010 to consolidate several crop insurance plans into a single "Common Crop Insurance Policy" beginning with the 2011 crop year.¹⁶ Yield-based plans (APH) continue, with the addition of a Yield Protection policy that functions like APH but uses a projected price based on the

^{(...}continued)

decisions. Some examples include http://www.agmanager.info/crops/insurance/risk_mgt/default.asp, http://www.ag.ndsu.nodak.edu/aginfo/cropmkt/cic.htm, and http://www.farmdoc.uiuc.edu/cropins/index.asp.

¹⁵ Participation at the CAT level has steadily decreased, particularly since subsidies on buy-up levels were increased in the Agriculture Risk Protection Act (ARPA) of 2000. In 2011, only about 11% of insured acres were insured at the CAT level.

¹⁶ USDA, Risk Management Agency, "RMA Releases New Common Crop Insurance Policy Basic Provisions," press release, March 31, 2010, http://www.rma.usda.gov/news/2010/03/combo.html.

futures market (rather than a price determined by RMA). The biggest change was the consolidation of several previous revenue products (Crop Revenue Coverage, Income Protection, Indexed Income Protection and Revenue Assurance) into a single revenue product called Revenue Protection and its companion, Revenue Protection With Harvest Price Exclusion.¹⁷ The change was designed to greatly simplify the insurance process for agents and promote better understanding of the options available for producers.

Crop Insurance Examples: Yield-Based vs. Revenue-Based

Two basic forms of crop insurance are yield-based and revenue-based. Yield-based insurance provides an indemnity when the actual yield falls below the guarantee level. Revenue-based insurance provides an indemnity when the revenue (actual yield x price) falls below the guarantee.

Actual Production History (APH) Example:

A loss occurs when the bushels of soybeans produced for the insurance unit (insurable acreage) fall below the production guarantee as a result of damage from a covered cause of loss. Assumptions: "normal" production = 48 bushels / acre; yield coverage level = 75%; established price coverage = 100%; price election = \$9.90 / bushel; actual production = 20 bushels per acre.

40	h shah sa sa ADH shi
48	bushels per acre APH yield
x .75	coverage level
36.0	bushel / acre guarantee
- 20.0	bushels / acre actually produced
16.0	bushels / acre of covered loss
× \$9.90	per-bushel price election
\$158.40	per-acre gross indemnity payment
- \$6.00	estimated producer-paid premium per acre (varies)
\$152.40	per-acre net indemnity
Revenue Product Example:	
36.0	bushels / acre guarantee (see prior example)
× \$11.00	per-bushel base price (announced in March)
\$396.00	per-acre guarantee
20	bushels / acre actually produced
× \$10.00	per-bushel harvest price (announced in November)
\$200.00	per-acre revenue
\$196.00	per-acre gross indemnity payment (\$396.00 - \$200.00)
- \$13.00	estimated producer-paid premium (varies)
\$183.00	per-acre net indemnity
Source: U.S. Department of Agricu	Ilture, Risk Management Agency, 2009 Commodity Insurance Fact Sheet - Soybeans - usda.gov/fields/mn_rso/2009/2009iasoybeans.pdf.

¹⁷ Crops are barley, canola, corn, cotton, grain sorghum, rapeseed, rice, soybeans, sunflowers, and wheat.

Federal Crop Insurance: Range of Coverage and Policies

I. Catastrophic Coverage (CAT) pays 55% of the established price of the commodity on crop losses in excess of 50%. The premium on CAT coverage is paid by the federal government; however, producers must pay a \$300 administrative fee (as of the 2008 farm bill, up from \$100) for each crop insured in each county. Limited-resource farmers may have this fee waived. CAT coverage is not available on all types of policies.

II. Buy-up Coverage (any coverage level higher than CAT)

Yield-based policies:

Actual Production History (APH) and Yield Protection policies insure producers against yield losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease. The farmer selects the amount of average yield he or she wishes to insure; from 50% to 85%. The farmer also selects the percentage of the projected price he or she wants to insure—between 55% and 100% of the crop price (for APH, the price is established annually by RMA; for Yield Protection, the price is based on futures market prices). If the harvest is less than the yield insured, the farmer is paid an indemnity based on the difference. Indemnities are calculated by multiplying this difference by the insured percentage of the selected price.

Group Risk Plan (GRP) insures against widespread loss of production based on county average yields. When the county yield for the insured crop, as determined by the National Agricultural Statistics Service, falls below the trigger level chosen by the farmer, an indemnity is paid regardless of the individual farmer's actual yield. Yield levels are available for up to 90% of the expected county yield. GRP protection involves less paperwork and costs less than the farm-level coverage described above. However, individual crop losses may not be covered if the county yield does not suffer a similar loss. This insurance is suitable for farmers whose crop losses typically follow the county pattern.

Dollar Plan provides protection against declining value due to damage that causes a yield shortfall. (Crop examples include cherries, chili peppers, citrus, and nursery crops.) Amount of insurance is based on the cost of growing a crop in a specific area. A loss occurs when the annual crop value is less than the amount of insurance. The maximum dollar amount of insurance is stated on the actuarial document. The insured may select a percentage of the maximum dollar amount equal to CAT (catastrophic level of coverage), or additional coverage levels.

The **Vegetation Index** and **Rainfall Index** do not measure direct production or loss; rather the farmer is insuring against an index that is expected to estimate production. The Pasture, Rangeland, and Forage (PRF) pilot program and the Apiculture pilot program (for beekeepers) use an index for different parts of the country.

Revenue-based policies:

Revenue Protection (RP) insures producers against yield losses due to natural causes such as drought, excessive moisture, hail, wind, frost, insects, and disease, and revenue losses caused by a change in the harvest price from the projected price. The producer selects the amount of average yield he or she wishes to insure; from 50% to 75% (in some areas to 85%). The projected price and the harvest price are 100% of the price determined by futures contracts. The amount of insurance protection is based on the greater of the projected price or the harvest price. If the harvested plus any appraised production multiplied by the harvest price is less than the amount of insurance protection, the producer is paid an indemnity based on the difference.

Revenue Protection With Harvest Price Exclusion insures producers in the same manner as Revenue Protection, except the amount of insurance protection is based on the projected price only (i.e., the amount of insurance protection is not increased if the harvest price is greater than the projected price).

Actual Revenue History (ARH) insures an average of historical grower revenues instead of insuring historical yields as done under APH. Like other revenue coverage plans, ARH protects growers against losses from low yields, low prices, low quality, or any combination of these events.

Group Risk Income Protection (GRIP) makes indemnity payments only when the average county revenue for the insured crop falls below the revenue chosen by the farmer.

Adjusted Gross Revenue (AGR) and AGR-Lite insure revenue of the entire farm rather than an individual crop by guaranteeing a percentage of average gross farm revenue, including a small amount of livestock revenue. The plan uses information from a producer's Schedule F tax forms, and current-year expected farm revenue, to calculate the policy revenue guarantee.

Livestock Policies insure against declining market prices or gross margins. Policies are available for swine, cattle, lambs, and milk.

Source: USDA's Risk Management Agency, http://www.rma.usda.gov/policies/.

Whole Farm Insurance

Adjusted Gross Revenue (AGR) and AGR-Lite policies insure revenue of the entire farm rather than an individual crop. AGR first appeared in 1999 to protect against production or market losses. Compared with AGR, AGR-Lite has higher coverage levels available for producers who have multiple commodities. Both use a producer's five-year historical farm average revenue as reported on the Internal Revenue Service (IRS) tax return form (Schedule F or equivalent forms). Also required is an annual farm report as a base to provide a level of guaranteed revenue for the insurance period (a one-year period corresponding with the producer's IRS tax period). Coverage levels range from 65% to 80% of historical revenue.¹⁸

In general, the AGR products are designed to protect specialty crops and/or commodities which might not be covered by individual policies. Historically, though, whole-farm insurance has seen limited participation. With individual crop insurance policies already providing significant protection for many producers, combined sales of AGR and AGR-Lite are usually less than 1,000 policies, a small fraction of the more than 1 million crop insurance policies sold. Also, observers say the AGR products are complicated in terms of compiling the information needed to consider purchasing the insurance and completing the application. Others also have noted that for such a policy to be widely adopted, coverage levels need to be substantially higher than individual crop insurance policies (i.e., higher than the current 80% level) in order to provide an amount of risk protection equivalent to that afforded by individual crop policies. A delay in indemnity payment also has been cited by producers as a drawback to those policies.

Crop Insurance Premium Subsidies

The producer's premium for a policy increases as the levels of coverage rise, and the premium on buy-up coverage is subsidized by the government at amounts ranging from 38% to 100%, depending on the coverage level (**Table 1**). The subsidy rate declines as the coverage level rises (i.e., deductible declines), but the total subsidy in dollars increases because policies are more expensive.

	-	-		-	-				
Coverage level (%)	CAT	50	55	60	65	70	75	80	85
Premium subsidy (%) for most polices (including those using basic and optional units)	100	67	64	64	59	59	55	48	38
Premium subsidy (%) for enterprise units	n/a	80	80	80	80	80	77	68	53
Premium subsidy (%) for area plans (yield)	n/a	n/a	n/a	n/a	n/a	59	59	55	55
Premium subsidy (%) for area plans (revenue)	n/a	n/a	n/a	n/a	n/a	59	55	55	49
Premium subsidy (%) for whole farm units	n/a	n/a	n/a	n/a	80	80	80	71	56

Table 1. Crop Insura	nce Premium Subsidies
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(government-paid portion of premium as a percent of total premium)

Source: 7 U.S.C. §1508(e).

Notes: n/a = not applicable. A basic unit covers land in one county with the same tenant/landlord. An optional unit is a basic unit divided into smaller units by township section. An enterprise unit covers all land of a single crop in a county for a producer, regardless of tenant/landlord structure. A whole farm unit covers more than one crop.

¹⁸ For more information, see USDA fact sheet at http://www.rma.usda.gov/pubs/rme/agr-lite.pdf.

Subsidy rates range from 38% to 67% for policies using either "basic" or "optional" units. Basic units cover all plantings in a single county of a crop with the same tenant/landlord. Optional units are basic units divided into smaller units by township section. As authorized under the 2008 farm bill, a higher subsidy rate (up to 80%) is provided for policies using enterprise units (all land for a single crop in a county, regardless of the tenant/landlord structure). Because the premium for policies using enterprise units is lower (a discount is given because the combined unit has greater geographic diversity and hence is less risky), a higher subsidy rate for enterprise units provides for an equal dollar amount of premium subsidy regardless of the type of unit used. Overall, the average subsidy rate was 58% in 2008, 61% in 2009, and 62% for 2010-2012. The rising trend results in part from a shift to policies using enterprise units by some farmers.

Geographic Distribution of Program Participation and Indemnities

With widespread use of crop insurance products for major crops (corn, cotton, soybeans, and wheat), the geographic distribution of acreage enrolled in crop insurance mirrors that of major producing areas (**Figure 4**). Crop insurance indemnities follow the same pattern, but with an emphasis on producing areas with less rainfall and more variable crop-weather conditions. For example, **Figure 5** shows crop insurance indemnities by county in 2011. Relatively high indemnities were paid in the Great Plains, where drought reduced crop yields in the south and central areas while excessive moisture affected plantings and production in the north.¹⁹ In 2012, a major drought affected a large portion of the United States, resulting in significant losses across the country (**Figure 6**).



Figure 4. Acres Enrolled in Crop Insurance, 2007

Source: USDA, National Agricultural Statistics Service, 2007 Census of Agriculture.

¹⁹ Adverse weather can affect crops in various ways. For example, in some North Dakota counties in 2009, the cause of loss was drought for some wheat policies, while it was excess moisture for other wheat policies in the same county.



Figure 5. Crop Insurance Indemnities in 2011

Source: USDA, Risk Management Agency, http://www.rma.usda.gov/data/indemnity/.





Source: USDA, Risk Management Agency, http://www.rma.usda.gov/data/indemnity/.

Distribution of Producer Subsidies

Producer subsidies for crop insurance are proportional to the value of the premiums and underlying liability of the policies. Compared with small farms, larger operations have greater crop liability, which increases the total costs of insurance and value of the government-paid portion of the total premium. Based on the distribution of insurance costs from USDA's Agricultural Resource Management Survey (ARMS) and actual premium subsidies from RMA (\$5.4 billion in 2009), CRS estimates that the producer subsidy in 2009 averaged nearly \$6,000 per farm for farms purchasing crop insurance.²⁰ By farm size, the calculated average ranged from \$1,300 per farm for operations with less than \$100,000 in sales to \$37,000 for farms with more than \$1 million in sales (see **Figure 7**). Unlike farm commodity programs, subsidies received under the crop insurance program are not subject to payment limits.

By crop, the bulk of producer subsidies are for corn, wheat, soybeans, and cotton, which together account for more than 80% of the subsidies and about three-quarters of total acres enrolled in the program (**Figure 8**). By state, premium subsidies are greatest in states where these crops are grown, primarily across the Great Plains, Corn Belt, and parts of the South (**Figure 9**). An analysis by the Government Accountability Office shows a similar geographic distribution for farmers receiving at least \$40,000 in producer premium subsidies (**Figure 10**).



Figure 7. Estimated Average Crop Insurance Premium Subsidy Per Farm in 2009

Source: CRS calculation using total premium subsidies from USDA's Risk Management Agency and distribution of crop insurance expenses by farm sales class from USDA's Agricultural Resource Management Survey.

Notes: Total producer subsidy was \$5.4 billion for crop year 2009. The calculated average was \$5,958 per farm (calculation includes only farms purchasing crop insurance).

²⁰ The producer subsidy in 2009 averaged \$2,500 per farm when the calculation includes all U.S. farms, not just those purchasing crop insurance. By farm size, the calculated average ranged from \$400 per farm for operations with less than \$100,000 in sales to \$32,000 for farms with more than \$1 million in sales.



Figure 8. Crop Insurance Premium Subsidies by Crop in 2009

Source: USDA's Risk Management Agency, Summary of Business.

Notes: Total is \$5.4 billion in crop year 2009. Corn, soybeans, wheat, and cotton account for 84% of the total. Other includes minor oilseeds, other feed grains, tobacco, peanuts, sugar beets and sugar cane, pasture, and other crops.



Figure 9. Crop Insurance Premium Subsidies for Top 20 States in 2009

Source: USDA's Risk Management Agency, Summary of Business.

Notes: Total producer subsidy was \$5.4 billion in crop year 2009. States in chart accounted for 87% of the total.



Figure 10. Locations of Participating Farmers Receiving Premium Subsidies of More Than \$40,000 in 2011

Source: U.S. Government Accountability Office, Crop Insurance: Savings Would Result from Program Changes and Greater Use of Data Mining, GAO-12-256, March 2012, p. 45, http://www.gao.gov/assets/590/589305.pdf.

Federal Program Costs

The annual agriculture appropriations bill traditionally makes two separate appropriations for the federal crop insurance program. It provides discretionary funding for the salaries and expenses of the RMA. It also provides "such sums as are necessary" for the Federal Crop Insurance Fund, which finances all other expenses of the program, including premium subsidies, indemnity payments, and reimbursements to the private insurance companies.

Government costs for crop insurance have increased substantially in recent years (**Figure 11** and **Table 2**). After ranging between \$2.1 and \$3.9 billion during FY2000-FY2007, costs rose to \$5.7 billion in FY2008 and \$7.0 billion in FY2009 as higher policy premiums from rising crop prices drove up premium subsidies and expense reimbursements to private insurance companies. After a decline in FY2010 following a drop in crop prices and good weather, program costs rose sharply to \$11.3 billion in FY2011 and \$14.1 billion in FY2012, when crop prices surged again and poor weather resulted in program losses.

The largest cost component is the subsidy on policy premiums for producers, which totaled \$7.1 billion in FY2012. Historically, the next largest item is reimbursement of administrative and operating (A&O) expenses to private insurance companies (\$1.4 billion in FY2012). With premiums reflecting only costs associated with policy risk, the A&O reimbursement is meant to pay delivery costs. In four of the last 10 years, the federal government also has realized underwriting losses (indemnities in excess of premiums received). In the other six years, the government has realized gains, which has partially reduced total costs. The underwriting gains (or losses) are derived in part from the federal government's role in providing the first level of reinsurance—that is, insurance for insurance companies.



Figure 11. Government Cost of Federal Crop Insurance

Source: CRS using data from U.S. Department of Agriculture, Risk Management Agency, http://www.rma.usda.gov/aboutrma/budget/fycost2003-12.pdf.

Fiscal Year	Program Losses or (Gains)ª	Federal Premium Subsidy	Private Company A&O Expense Reimbursements ^b	Other Costs ^c	Total Government Cost
2000	196	1,353	540	86	2,175
2001	725	١,707	648	82	3,162
2002	1,182	1,513	656	115	3,466
2003	822	I,874	743	149	3,588
2004	(305)	2,387	900	143	3,125
2005	(293)	2,070	783	139	2,699
2006	(32)	2,517	960	125	3,570
2007	(1,068)	3,544	1,341	123	3,940
2008	(1,717)	5,301	2,016	137	5,737
2009	108	5,198	1,602	131	7,039
2010	(2,523)	4,680	1,371	143	3,671
2011	2,392	7,376	1,383	144	11,295
2012	5,370	7,149	1,411	141	14,071

Table 2.	Government	Cost	of	Fed	eral	Crop	Insurance
	,		c .		`		

(millions of dollars)

Source: U.S. Department of Agriculture, Risk Management Agency, http://www.rma.usda.gov/aboutrma/budget/ fycost2003-12.pdf.

Government's underwriting loss (gain if negative) = the difference between total indemnity payments for a. crop losses and total premiums (farmer and government paid), plus or minus any private company underwriting gains or losses.

A&O = administrative and operating.b.

Other costs include federal salaries of USDA's RMA and, beginning in 2002, various research and c. development initiatives mandated by the Agriculture Risk Protection Act of 2000 (P.L. 106-224).

Private Company Reimbursement and Risk Sharing

A&O reimbursements to the companies and risk sharing between USDA and the private companies and are spelled out in a Standard Reinsurance Agreement (SRA), which plays a large role in determining program costs. The current SRA was completed in summer 2010.²¹

Standard Reinsurance Agreement (SRA)

Under the current SRA and cuts specified in the 2008 farm bill, the reimbursement rate for A&O was approximately 11% of total premiums in both 2011 and 2012, compared with an average of 19% in 2006-2009.²² This means that for every \$100 in premiums collected, the companies receive a reimbursement of \$11 from the federal government. The reimbursement rate varies by insurance product, depending on whether it is for a yield-based or a revenue insurance product.

The SRA places a maximum for A&O reimbursements at \$1.3 billion per year (adjusted annually for inflation) and a minimum at \$1.1 billion. The cap controls government costs when crop prices rise (price levels directly affect policy premiums), while the minimum is intended to protect companies against low market prices.

Method for Calculating A&O Reimbursements

Prior to the 2010 renegotiation of the SRA, some observers argued that the reimbursement rate should be pegged to something other than premium value, such as the number of policies sold, to better reflect actual costs and to help reduce federal expenditures. If premiums are actuarially sound, the administrative costs of writing a policy are likely not proportional to the value of the policy (e.g., whether 10 acres or 1,000 acres, or \$3 per bushel or \$9 per bushel). In order to control costs, A&O reimbursement under the current SRA is still based on premiums (which are directly affected by crop prices), but it is limited to approximately \$1.3 billion in 2011 and adjusted upward in subsequent years with an inflation factor. The private crop insurance companies remain concerned that limits on the A&O will negatively affect the crop insurance industry and possibly jeopardize the delivery of crop insurance, particularly in high-risk areas. Part of the criticism of the A&O stemmed from a study by the Government Accountability Office (GAO) on costs associated with administering the crop insurance program.²³ In 2009, GAO concluded that the structure of A&O reimbursements "present[s] an opportunity to reduce government spending without compromising the crop insurance program's safety net for farmers." According to GAO, the method for calculating the A&O reimbursement should be redesigned to better reflect reasonable business expenses, in terms of dollars per policy, rather than crop prices. Using crop prices, GAO said, generated a "kind of windfall" for many insurance agencies/agents as insurance companies, using funds from increased levels of A&O reimbursements, pay higher commissions to compete for each other's "book of business" and associated underwriting gains. In response, the crop insurance industry contended that overall agent compensation was consistent with compensation paid in related insurance industries.24

²¹ The 2008 farm bill allows USDA to renegotiate the SRA once every five years starting with the 2011 reinsurance year (the 12-month period beginning July 1, 2010). For more information on the SRA and related issues, see CRS Report R40966, *Renegotiation of the Standard Reinsurance Agreement (SRA) for Federal Crop Insurance*.

²² The 2008 farm bill (§12016(E)) reduced the A&O reimbursement by 2.3 percentage points beginning with the 2009 reinsurance year (July 1, 2008). Also, the farm bill reduced the A&O reimbursement rate to 12% for any plan of insurance that is based on area-wide losses. The farm bill also reduced the target loss ratio (indemnities paid divided by premiums collected of the entire program) from 1.075 to 1.00.

²³ U.S. Government Accountability Office, *Crop Insurance—Opportunities Exist to Reduce the Costs of Administering the Program*, Washington, DC, April 2009, http://www.gao.gov/new.items/d09445.pdf.

²⁴ On June 1, 2009, 14 organizations affiliated with the crop insurance industry wrote to Congress to comment on the crop insurance program performance and the need for maintaining current subsidies and A&O reimbursements. See (continued...)

The SRA also defines risk-sharing between the government and private insurance companies. Under the SRA, insurance companies may transfer some liability associated with riskier policies to the government and retain profits/losses from less risky policies.²⁵ This transfer of risk is accomplished through a set of reinsurance funds maintained by FCIC. Within 30 days of the sales closing dates for each crop, companies allocate each policy they sell to one of two funds that are maintained for each company by state: Assigned Risk or Commercial. (The previous SRA maintained three funds.) Each company then decides what proportion of premiums (and potential for losses/gains) to retain within each reinsurance fund, subject to required retention limits of individual funds. The by-state retention requirements are 20% for the Assigned Risk Fund and at least 35% for the Commercial Fund. The ceded (i.e., not retained) portion of premiums goes to the government.

The assigned risk fund is used for policies believed to be high-risk because it provides the most loss protection to insurance companies through "stop-loss" coverage that reinsures against state-level disasters. For producers, it helps ensure that benefits of the federal crop insurance program are extended to all eligible farmers, regardless of risk. Because companies retain only 20% of their business as specified in the SRA, the federal government assumes a large portion of liability associated with high-risk policies. The SRA also specifies a 75% limit (by state) on the proportion of a company's business that may be placed in the Assigned Risk Fund.

The Commercial Fund is for policies that the companies expect to have the greatest opportunity for profit and only a small amount of losses. While the profit potential is greater compared with the Assigned Risk Fund, so is the loss potential.

Once the policies are allocated to one of the two funds, the gain/loss sharing for a company's retained business is based on loss ratios (indemnities paid divided by premiums collected) as established in the SRA. As a general rule, the higher the loss ratio, the lower the company share of gains or losses (and vice versa, except at very low loss ratios when the company share of gains declines). See **Table 3** for the schedule contained in the current SRA. **Figure 12** illustrates risk sharing for the Commercial Fund.

For the Commercial Fund, policies from states with historically lower underwriting gains have a more favorable gain/loss sharing structure for insurance companies than policies sold in five states with better underwriting performance (Illinois, Indiana, Iowa, Minnesota, and Nebraska). The provision is expected to provide insurance companies with more financial incentives than in the past to sell and service policies in the areas of the country that have historically attracted less interest because companies had expected fewer underwriting gains in those areas.

^{(...}continued)

http://www.farmpolicy.com/wp-content/uploads/2009/06/gaocropinsuranceletter.pdf.

²⁵ Dmitry V. Vedenov et al., "Portfolio Allocation and Alternative Structures of the Standard Reinsurance Agreement," vol. 31, no. 1 (April 2006), pp. 57-73, http://ageconsearch.umn.edu/bitstream/10145/1/31010057.pdf. See also Joseph W. Glauber, "Crop Insurance Reconsidered," *American Journal of Agricultural Economics*, vol. 86, no. 5 (2004), pp. 1179-1195.

		Share of Company's Gains/Losses in Commercial Fund (%)			
Share of Company's Loss Ratio Gains/Losses in Assigned Risk (%) Fund (%)		Group I (IL, IN, IA, MN, NE)	All other states		
0 to 50	3	5	5		
>50 to 65	13.5	40	40		
>65 to 100	22.5	75	97.5		
>100 to 160	7.5	65	42.5		
>160 to 220	6	45	20		
>220 to 500	3	10	5		
>500	0	0	0		

Table 3. Share of Crop Insurance Company's Gains/Losses by Fund and Loss Ratio (share of gains/losses in percent)

Source: U.S. Department of Agriculture, Risk Management Agency, Standard Reinsurance Agreement dated June 30, 2010, http://www.rma.usda.gov/news/2010/06/630sra.pdf.

Notes: Loss ratio is indemnities divided by total premiums. See figure below for illustration.



Figure 12. Risk Sharing for the Commercial Fund

(for Group I states of IL, IN, IA, MN, NE)

Source: CRS, using data from U.S. Department of Agriculture, Risk Management Agency, Standard Reinsurance Agreement dated June 30, 2010, http://www.rma.usda.gov/news/2010/06/630sra.pdf.

Notes: The USDA share of gains and losses is lowest when the loss ratio (indemnities divided by premiums) is near 1.0. Insurance companies place "less risky" policies in the Commercial Fund. Separate schedules apply to the Commercial Fund in all other states and for the Assigned Risk Fund (policies that companies consider to be higher risk).

The final risk-sharing component of the SRA is the "net book quota share," defined as the proportion of a company's overall gain or loss over its entire "book of business" that is ceded to the government after all other reinsurance provisions in the SRA have been applied. Under the SRA, companies must cede a 6.5% share of their cumulative underwriting gains/losses to the government. During years in which there are underwriting gains, 1.5% of this share is distributed back to companies that sell and service policyholders in 17 underserved states. Through the net book quota share, the government receives a portion of underwriting gains from a company's retained business (but will also pay a portion of the losses, if realized). Since the company's total book includes a higher proportion of policies with lower risk, this portion is generally a positive value, which offsets part of the government costs of the program.

Trends in A&O Reimbursement and Underwriting Gains

Since A&O reimbursements are based on a percentage of premiums, the dollar amount of A&O reimbursement has risen sharply in recent years as premiums have risen during the last decade, reflecting higher crop prices. The A&O reimbursement increased from an average of \$881 million during 2004-2006 to \$2.0 billion in 2008 (**Table 2**). A&O reimbursements declined to \$1.6 billion in FY2009 following a decline in crop prices. Under changes in the 2010 SRA, an inflation-adjusted cap is expected to limit future gains in A&O.

Company underwriting gains (the amount by which a company's share of retained premiums exceeds its indemnities) have increased substantially in recent years as weather has been generally favorable for growing crops (**Table 4**). In 2012, though, a major drought across major producing regions led to sharply higher indemnities, which resulted in losses for the 2012 crop year.

Crop Year	Net Acres Insured (mil. acres)	Gross Premiumª (\$ million)	Gross Liability⁵ (\$ million)	Gross Loss Ratio ^c	Private Co. Underwriting Gain (Loss) ^d (\$ million)
2000	206	2,540	34,444	1.02	282
2001	211	2,962	36,729	1.00	346
2002	215	2,916	37,299	1.39	(10)
2003	217	3,431	40,621	0.95	381
2004	221	4,186	46,602	0.79	696
2005	246	3,949	44,259	0.60	915
2006	242	4,580	49,919	0.77	825
2007	272	6,562	67,340	0.54	1,574
2008	273	9,851	89,893	0.88	I,098
2009	265	8,95 I	79,572	0.58	2,277
2010	256	7,594	78,102	.56	1,929
2011	266	11,966	114,221	.91	I,666
2012 (est.)	282	11,056	116,648	1.85	(2,186)

Table 4. Federal Crop Insurance Program and Company Data

Source: For premium, liability, and loss ratio (except 2012), *Summary of Business Report*, FCIC, http://www.rma.usda.gov/data/sob.html. For underwriting gain/loss (and loss ratio in 2012), *Crop Year Premium and Other Income*, FCIC, http://www.rma.usda.gov/aboutrma/budget/cycost2003-12premiumbreakout.pdf

- a. Farmer-paid premium plus government-paid premium subsidy.
- b. Liability represents total exposure of the program, meaning that if all participating farmers suffered losses to the full extent of coverage, program indemnities would be the total liability.
- c. Indemnities divided by premiums. Gross loss ratio is for the program in total (government plus private companies).
- d. The underwriting gains represent the amount by which the company's share of retained premiums exceeds its indemnities (vice versa for underwriting losses).

During the last decade, increases in insured acreage and higher crop prices have also increased gross liability. Liability represents total exposure of the program, meaning that if all participating farmers suffer losses to the full extent of coverage, indemnities would be the total liability.

Crop Insurance and 2012 Farm Bill Proposals

The federal crop insurance program is permanently authorized. Hence, periodic reauthorization of the program, including premium subsidies, is not needed. In contrast, the farm commodity provisions of the Food, Conservation, and Energy Act of 2008 (P.L. 110-246, the 2008 farm bill) expire with the 2012 crop year. Consequently, the 112th Congress has been considering an omnibus farm bill that would establish the direction of agricultural policy for the next five years. The Senate passed its version of the new farm bill (S. 3240) on June 21, 2012, and the House Committee on Agriculture passed its version (H.R. 6083) on July 11, 2012.

Both bills would make a number of enhancements to the crop insurance program, including the establishment of the Supplemental Coverage Option (SCO). SCO would be available for purchase by crop producers as an additional policy to cover part of the deductible under the producer's underlying policy. For more information on the crop insurance provisions in the proposed legislation, see CRS Report R42759, *Farm Safety Net Provisions in a 2012 Farm Bill: S. 3240 and H.R. 6083.*

Crop insurance baseline funding for FY2013-FY2022 is estimated by the Congressional Budget Office (CBO) at \$89.8 billion. H.R. 6083 would increase federal spending on crop insurance by \$9.5 billion over the 10-year period and S. 3240 would increase spending by \$4.7 billion, according to CBO projections. Two new insurance products—Supplemental Coverage Option (SCO) and the Stacked Income Protection Plan (STAX) for cotton—account for most of the additional cost.

Concluding Comments

For many farmers, crop insurance is the most important component of the farm safety net, given the large number of crops available for coverage and the fact that commodity support programs currently offer less protection from price declines than they did previously. In the coming years, outlays for crop insurance are expected to exceed commodity programs, making crop insurance a potential target for deficit reduction. For policymakers, a main goal when contemplating modifications to the crop insurance program would likely be saving federal dollars without adversely affecting farmer participation or policy coverage. A concern from the industry is that any cuts could adversely affect company interest in selling and servicing crop insurance products to farmers, although some say that compensation is more than adequate. Separately, environmental groups are concerned that premium subsidies might encourage production on environmentally fragile land.

Author Contact Information

Dennis A. Shields Specialist in Agricultural Policy dshields@crs.loc.gov, 7-9051