

Crop Insurance

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UP FRONT

- **The government has supported agriculture financially since the 1930s to help maintain the viability of farming and ensure the stability of the nation's food supply. However, due to the success of crop insurance, farmers today are increasingly more self sufficient than in the past. Had the 2012 drought occurred in 2000, the cost to the public would have been much greater.**
- **In 2000 the government spent nearly \$28 billion to help farmers manage the yearly variations in production and profitability and less than \$3 billion on crop insurance. In 2012 total safety net spending was \$10 billion and was split between commodity support programs and crop insurance.**

THE TOPIC

As its proponents hoped, crop insurance has become the largest single source of financial protection to farmers. From insuring 182.2 million acres in 1997, the program has grown and covered more than 280 million acres in 2012, a 6.1 percent increase over 2011. According to National Crop Insurance Services, the program is meeting the Congressional mandate of insuring 80 percent of insurable farmland.

There are two kinds of crop insurance: crop-hail, which is provided by the private sector, and multiple peril, an all-risk coverage underwritten by the private sector and the federal government and serviced mostly by the private sector. Crop-hail insures against loss of the value of a crop as a result of damage by hail. Multiple peril insurance covers loss of crop value as a result of all types of natural disasters, including drought, excessive moisture and unusually hot weather.

Up to 1995, only about one-third of farmers bought federal multiple peril crop insurance because, in the event of a disaster, they could generally rely on Congress to bail them out with disaster assistance and emergency loans.

With the passage of reforms in 1995, Congress made it harder to justify legislation granting disaster aid. It also took other steps to encourage farmers to buy insurance against loss of income due to natural disasters, requiring new types of products, such as revenue protection, to make crop insurance more attractive and subsidizing a portion of the basic traditional coverage that protects against loss of yield. These efforts have paid off. More than 90 percent of policyholders opt for more than basic coverage.

The U.S. Department of Agriculture is embarking on a program to help small and underserved farmers understand crop insurance and other tools they need to effectively manage risk.

RECENT DEVELOPMENTS

- Lawmakers began discussions on a new farm bill in 2012, but they were not able to agree on key provisions, including the size of cuts in the food stamp program, before the summer recess. Food and nutritional programs have traditionally been part of farm bills in that they link the production of food with the need to ensure low-income people receive enough food to live on. The farm bill is renewed every five years; the provisions of the 2008 bill were extended to September 2013.
- Attention has centered on reducing the cost to the public of federal subsidies to farmers, including ending direct payments to farmers regardless to crop yields. Some of the savings could be used to expand the crop insurance program. Other proposals would severely reduce the crop insurance subsidy farmers receive, from 62 percent of total premiums to 37 percent, the level that existed in 2000 before higher subsidies increased the purchase of crop insurance to its present level. The subsidy was raised in 2000 to encourage farmers to buy insurance rather than rely on taxpayer-funded ad hoc disaster payments. According to the Congressional Budget Office, the Crop Insurance Subsidy Reduction Act could save taxpayers \$40.1 billion over 10 years. However, critics warn that if the subsidy reduction cuts crop insurance purchases, Congress could once again be forced into making ad hoc disaster emergency payments.
- Data from the USDA and the Congressional Budget Office show that total government spending on farm safety net programs dropped by two-thirds from fiscal years 2000 to 2012 as greater emphasis was placed on crop insurance to make farmers more self-sufficient.
- Data from the Federal Crop Insurance Corp. for the crop year 2012 show that indemnities (claim payments) totaled nearly \$17 billion, the result of the severe drought that has resulted in significantly lower crop yields, but this was partially offset by more than \$11 billion in premiums paid by farmers for catastrophic and regular coverage. The government's coverage subsidy came to \$6.9 billion.
- The record payments can be attributed to the popularity of revenue coverages, see Background, and high commodity prices. Payments are based on a percentage of commodity prices. Before crop insurance became such a widely available tool to mitigate losses resulting from natural disasters, whenever there was a devastating crop failure Congress provided ad hoc disaster assistance fully paid for by taxpayers.
- Claims for crop year 2011, when losses were pushed up by drought in the Southern Plains and flooding in the Midwest, were \$10.9 billion.
- The National Crop Insurance Services (NCIS), a trade group, says crop insurance companies have the capital to deal with 2012 claims. Regulators require crop insurers to have sufficient funds to cover catastrophic losses. Every year the Federal Crop Insurance Corporation reviews and approves every crop insurer's plan of operation to ensure adequate capital is available, according to NCIS. There are now 18 crop insurance companies.
- Farmers growing grain crops used to have to choose from among a number of different types of multiple peril crop insurance policies. Since 2010, a "combo policy" has simplified the choices, allowing farmers to elect either revenue and yield protection.
- Livestock insurance is now available in all states where livestock are farmed. Livestock insurance, which just a few years ago was only a pilot project, allows the policyholder to lock in prices for animals to be sold for slaughter. If prices subsequently fall, the policy compensates for a portion of the loss.
- In a related move that will also help livestock producers, the RMA has developed programs for pasture, rangeland, forage (PRF) and hay to provide a safety net for farmers who face drought conditions. There are two programs: the Rainfall Index program and the Vegetation Index—both

use indexes and grids that are smaller than counties to determine expected losses. The Rainfall program is based on accumulated rainfall and the Vegetation program relies on satellite images to measure departures from expected losses in a given grid area.

Crop-Hail Insurance, 2006-2015

(\$000)

Year	Direct premiums written (1)	Annual percent change	Loss ratio (2)	Annual point ch
2006	\$405,254	-6.8%	50	
2007	489,649	20.8	48	
2008	669,436	36.7	83	
2009	621,322	-7.2	91	
2010	682,188	9.8	67	
2011	843,801	23.7	116	
2012	958,163	13.6	74	
2013	958,857	0.1	67	
2014	991,984	3.5	122	
2015	979,703	-1.2	76	

(1) Before reinsurance transactions, total for all policyholders of crop-hail insurance.

(2) The percentage of each premium dollar spent on claims and associated costs. A drop in the loss ratio represents an improvement; an increase represents a deterioration.

Source: National Crop Insurance Services.

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Multiple Peril Crop Insurance, 2006-2015 (1)

(\$000)

Year	Net premiums written (2)	Annual percent change	Combined ratio (3)	Annual point o
2006	\$2,824,769	26.4%	77.9	
2007	3,648,996	29.2	74.7	
2008	5,077,625	39.2	90.1	
2009	3,964,690	-21.9	79.7	
2010	3,501,631	-11.7	73.9	
2011	5,456,991	55.8	90.6	
2012	5,321,811	-2.5	104.0	
2013	4,942,547	-7.1	103.3	
2014	4,189,765	-15.2	104.9	
2015	3,680,768	-12.1	99.9	

(1) Includes private crop-hail insurance from 2006 to 2013. Data for 2014 and 2015 exclude private crop-hail insurance.

(2) After reinsurance transactions, excludes state funds.

(3) After dividends to policyholders. A drop in the combined ratio represents an improvement; an increase represents a deterioration.

(4) Calculated from unrounded numbers.

Source: NAIC data, sourced from S&P Global Market Intelligence, Insurance Information Institute.

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Top 10 Writers Of Multiple Peril Crop Insurance By Direct Premiums Written, 2015

(\$000)

Rank	Group/company	Direct premiums written (1)	Ma
1	Chubb Ltd. (3)	\$1,750,152	
2	Zurich Insurance Group (4)	1,742,209	
3	QBE Insurance Group Ltd.	1,264,485	
4	American Financial Group Inc.	892,516	
5	Endurance Specialty Holdings	768,612	
6	Farmers Mutual Hail Insurance Co. of Iowa	655,868	
7	CGB Insurance Co.	555,989	
8	Tokio Marine Group	493,235	
9	Archer-Daniels-Midland Co.	401,456	
10	Everest Re Group Ltd.	209,066	

(1) Before reinsurance transactions, includes state funds.

(2) Based on U.S. total, includes territories.

(3) Chubb Ltd. data reflect the 2015 merger with Ace Ltd.

(4) Data for Farmers Insurance Group of Companies and Zurich Financial Group (which owns Farmers' management company) are reported separately by S&P Global Market Intelligence.

Source: NAIC data, sourced from S&P Global Market Intelligence, Insurance Information Institute.

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BACKGROUND

Insurance works best when everyone exposed to a certain kind of risk, such as fire, buys a policy, but only a limited number of policyholders suffer losses (and therefore file claims) in any given year. Where all policyholders in a geographical area are likely to file claims, as farmers would in the event of a drought, and where the people mostly likely to purchase insurance are those most vulnerable to loss, such as farmers in flood plains, insurers cannot spread the risk of loss broadly enough and over a

sufficient length of time to make insurance affordable. This fundamental principle of insurance is critical to an understanding of the history of crop insurance.

Agricultural production is subject to many uncertainties, including natural disasters. Adverse weather, insect infestations and plant diseases can severely reduce the yield or quality of a crop, wiping out a farmer's profits for the whole year in a bad season.

The most important consideration, as far as insurers are concerned, is the potential for catastrophic losses resulting in widespread and severe damage claims. Many "perils," or causes of loss, to which farmers are exposed, such as heat and drought, freezing temperatures and excessive moisture, can affect whole regions. Droughts may also persist for extended periods so that farmers may suffer successive losses. But there is one common weather-related disaster that generally impacts a more limited area, and that is hail.

Hail strikes randomly and erratically. Crops growing in one part of a field may be completely ruined while the remainder is unscathed. In addition, damage from hail can be easily identified and assessed separately from other adverse conditions that can lead to yield losses.

The catastrophic nature of many crop-related perils led to the development of two types of crop insurance: crop-hail insurance, which is provided by the private marketplace, and the multiple peril crop insurance program, which is overseen and subsidized by the federal government and sold and serviced by private insurers. Multiple peril insurance covers most causes of loss, as its name suggests.

The History of the Federal Crop Insurance Program: Hail insurance has been in existence in some form since the early part of the twentieth century and it has been a thriving segment of the insurance industry since the 1920s. Insurers also tried to develop a multi-risk crop insurance business. But the attempt failed because they had insufficient data to set adequate rates to cover the kind of widespread catastrophic losses that long periods of drought, for example, produced.

In 1933 at the height of the Great Depression, Congress passed major legislation aimed at protecting the family farm. By restricting domestic production, it hoped to raise prices for agricultural products and this, together with subsidies to keep acreage unplanted, would restore farmers' standard of living to pre-World War I levels. Five years later in 1938 after the U.S. Supreme Court declared the law unconstitutional, a new piece of legislation was enacted with similar goals, authorizing the Secretary of Agriculture to set acreage and marketing quotas for staple and export crops and to pay cash subsidies for planting soil conserving crops. (It was not until the 1990s that Congress began to seriously question the wisdom of protecting farmers from market forces, especially since the family farms that such programs were designed to protect now account for only a small portion of agricultural production.)

In the same year that price support legislation was passed, Congress approved the Federal Crop Insurance Act, thereby creating the first federal crop insurance program. Backed by the resources of the U.S. Treasury Department, lawmakers expected the federal program to avoid the problems that had thwarted the formation of a private multi-risk insurance industry. However, it was plagued by high costs, low participation on the part of farmers and an inability to accumulate sufficient reserves to pay for catastrophic losses. And as federal expenditures under these programs grew, not surprisingly, farmers had little incentive to purchase crop insurance and consequently for decades the program remained limited in scope.

In 1980, frustrated by the program's continuing deficiencies, Congress passed legislation designed to make crop insurance the preeminent vehicle for helping farmers survive major agricultural disasters. Its goals were to increase participation in the program to the point where government-funded disaster assistance programs could be abolished; raise the level of efficiency by joining with the private sector to sell, service and bear some of the risk of providing coverage (until then crop insurance was provided

solely by the U.S. Department of Agriculture); and create an actuarially sound program that would reduce federal outlays while keeping coverage affordable through subsidies.

The private sector would be involved in two ways: as master marketers and reinsured companies. Master marketers were insurers paid by the federal government to sell crop insurance policies but who did not assume liability on policies they serviced. (This arrangement was phased out by 1994, see below). A decade later the program was still experiencing problems.

Market-oriented Reforms: The Federal Crop Insurance Reform Act of 1994 was passed at a time when the costs of all agricultural programs were under intense scrutiny as part of efforts to balance the federal budget. With little hope of bringing expenditures under control unless it made sweeping changes in the program, Congress decided to mesh crop insurance and disaster assistance into one program, radically restructuring the agricultural community's safety net.

Lawmakers took a multipronged approach. First, if disaster payments were to be severely curtailed or abolished, farmers would need some measure of economic security. A key element of the legislation, therefore, was the provision of basically free "CAT" coverage?insurance against catastrophic losses. All producers of insurable crops would be able to purchase CAT coverage for a nominal processing fee. Crops not covered by the federal crop insurance program would be eligible for a special disaster assistance program with payments triggered by area-wide losses. The level of payment would be similar to that of the CAT insurance plan.

Second, as an added incentive for growers to invest in a comprehensive multiple peril crop insurance program, the federal government would subsidize the premium for additional insurance coverage, see below.

Third, the "emergency" designation status for crop loss legislation, which allowed undisciplined off-budget borrowing to pay for disaster relief, would be repealed. Any future disaster assistance would be considered part of the budget and therefore could not be approved without an offsetting reduction in spending for other programs. Fourth, all farm programs, including crop insurance, would be handled by a single agency to improve service and program coordination.

The Federal Crop Insurance Corporation would manage the crop insurance program, establishing insurance policy terms and conditions, setting rates and generating the payment of claims through its Risk Management Agency (RMA). The exception to this is the noninsured crop disaster assistance program, which remains with the Farm Service Agency. The sale and servicing of policies would be shifted to the private sector.

The New Deal price support program had allowed farmers to sell their crops to the federal government for a fixed price when market prices fell below a government-set target price. Now that the subsidy program was about to end, there was a need to fill this gap.

The 1996 Agricultural Market Transition Act addressed the need for "revenue" protection?the product of yield and price. Provisions in the bill set up various pilot programs that respond to fluctuating price levels as well as yield variability using the Chicago Board of Trade (CBOT) commodity prices.

In 2000, Congress approved another major piece of legislation, the Agricultural Risk Protection Act (ARPA). The Act made it easier for farmers to buy different types of multiple peril crop insurance, including revenue insurance, by increasing government subsidies.

Crop-hail Insurance: Insurance coverage for hail damage is provided by both the private sector, with crop-hail insurance, and under federally subsidized multiple peril insurance policies. Farmers who purchase crop-hail coverage can choose to drop coverage for hail under the multiple peril policy, in

exchange for a reduction in premium, or keep it for additional protection.

A basic crop-hail policy covers losses due to hail and generally also fire, which is characterized by the same randomness as hail. The policy also covers damage caused by lightning and transit after harvest to storage. Coverage for additional causes of loss, such as vandalism, may be available as well as coverage for replanting costs when hailstorms early in the growing season damage a crop so severely that it has to be replanted. When the destroyed crop is replanted, the farmer also receives compensation for the reduction in expected yield due to the later planting date. Most insurers offer policies for the major grain and hay crops but the availability of coverage for specialty and vegetable crops is more limited.

A policy can be purchased at any stage during the growing season from the time when 50 percent of the crop is clearly visible to the anticipated harvest date, as long as the crop has not already been damaged by hail. To prevent growers from closely tracking weather patterns and waiting until a storm with the potential for hail is imminent before buying insurance, the policy does not take effect until one minute after midnight on the second day after the signing of the application. Farmers can insure all crops in which they have a financial interest (where land is leased, the landowner as well as the farmer have financial interests in the crop yield) or just a portion of their acreage.

The amount of coverage, which is purchased on a per-acre basis, is limited to the expected value of the crop, including anticipated profit. Coverage amount is the harvest price per bushel (or pound) forecast for the crop at the time the insurance policy is sold, times the number of bushels or pounds each acre is expected to produce. Premiums vary according to the susceptibility of the crop to hail damage and the location of the crop. Since hail losses have been tracked for more than 40 years, certain townships are known to be more prone to hail damage than others.

After a report of loss, the adjuster estimates the percentage reduction in yield due to hail damage by taking samples and sometimes actually counting the plants damaged in a representative area. The loss calculation takes into account the fact that the expected value of the crop at the time the loss occurs may be higher than the value (yield times market price) forecast at the time the policy was written. However, the claim payment or "cash value" cannot exceed the original underwriting limit or the policyholder's financial interest in the crop. Where there is the possibility of a bumper crop, the farmer may increase coverage mid-season.

Multiple Peril Crop Insurance: Multiple peril, or all risk crop insurance, protects against low yield and crop quality losses due to adverse weather (including hail) and unavoidable damage from insects and disease. While multiple peril insurance covers most economically significant agricultural crops grown in the United States, more than 100 crops, insurance for a specific crop may not be available in every state or in every county within a state. Most crops for which there is not yet coverage are eligible for the limited protection offered by the Noninsured Crop Disaster Assistance Program.

A farmer purchasing multiple peril crop insurance has a number of coverage options. The first is a CAT (catastrophe) policy, the lowest amount of protection available. The federal government subsidizes the entire cost of the CAT coverage. Farmers pay only an administrative fee. In addition, farmers can buy additional insurance, known as "private supplemental," under a "buy up" program designed to encourage purchase of higher, more adequate levels of coverage.

Under the buy-up program, the federal government subsidizes a portion of the premium. Producers of some crops may be eligible for a multiple peril coverage known as "group risk" crop insurance, which may cost less than other options. It differs from the basic coverage in that yield guarantees are based on the county average yield rather than that of the individual farmer and is suitable for farmers whose yields tend to follow countywide yields. Policyholders automatically receive an insurance payment in any year that the county average yield falls below the yield guarantee.

Differences Between Crop-hail and Multiple Peril Insurance: There are several key differences between multiple peril and crop-hail insurance programs. First, farmers purchasing multiple peril insurance choose coverage levels by "unit" rather than by acre as with crop-hail. A unit is the entire acreage of the crop planted in the county by the farmer. Farmers can also break down coverage by "sections"—one square mile—or by irrigated and dryland practices. This difference is most evident when a loss occurs, because in the multiple peril program the amount of the loss—the reduced yield—is averaged out over all the fields in the unit rather than over the affected acre or acres insured.

Second, a farmer cannot suddenly decide to buy a multiple peril policy. Unlike crop-hail, multiple peril coverage must be purchased prior to certain dates set by the federal government, which vary according to the county and the crop. These sign-up deadlines are set early in the planting season before long-range weather forecasts can influence purchase decisions. Coverage takes effect once the crop is planted, but the crop must be planted before the last government established planting date by crop and by county. Coverage may not be added during the growing season.

In addition, crop-hail coverage generally provides coverage from the first dollar of loss, although deductibles are offered, whereas multiple peril coverage includes what amounts to a deductible, guaranteeing up to 100 percent of expected market price but never 100 percent of yield.

Standard Reinsurance Agreement: From a private reinsured company financial perspective, the federal crop insurance program is unique in many ways. The first is the Standard Reinsurance Agreement. This sets out the relationship between private insurance companies and the federal government concerning the risk each will bear. There are three risk pools in each state—the commercial, developmental and assigned risk funds—and the amount of risk the insurer retains varies according to the pool and by state. Those policies covering acreage in counties known for low yields, for example, will be placed in the assigned risk fund, where the federal government bears most of the risk, and those where the risk of low yields is lowest in the commercial pool. Insurers may also reinsure a portion of their business in the private reinsurance market. Second, the agreement reimburses crop insurers for administrative and operating costs. Starting in crop year 2011, all administrative and operating costs are reimbursed by the federal government on a per policy basis rather than a percentage of premiums basis to neutralize the impact of fluctuations in commodity prices.

In addition, crop insurers have less investment income than insurers in other segments of the industry because they receive payment for coverage after it has been provided, rather than in advance as with other types of insurance. Premiums, for example, are not due until the end of the insurance period and are not paid on policies under which claims have been filed. The premium is deducted from amounts owed, and administrative expenses are not reimbursed until the actual acreage planted is reported, often as much as five months after the insurance sales closing date. Moreover, premiums fluctuate widely because they are tied to the market value of the crop and the acreage planted.

Revenue Insurance: Farmers face three major risks: low crop prices, poor quality and low yields. Under the standard multiple peril policy, farmers are compensated for losses in crop yield. Revenue insurance, which was first introduced in the mid-1990s, goes a step beyond standard multiple peril coverage. It guarantees farmers a certain income, allowing them to manage both yield and price risk. It

recognizes that farmers' income is the product of the price they receive for what they have grown, as well as the number of bushels or pounds their acreage yields. With a revenue insurance policy in hand, farmers can borrow against and market their crops in advance, knowing they will have set revenues regardless of market conditions at harvest time.

Several types of revenue insurance programs were developed, but these were all bundled into the Common Crop Insurance, or "Combo," policy in 2010 to reduce costs and streamline the administration of the program.

The new Revenue Protection policy provides protection against a production loss, a price decline or increase, or a combination of both. Yield protection provides protection against a production loss for crops for which revenue insurance is available but not elected. Farmers can also purchase revenue protection and yield protection guarantees on a per acre basis. Group risk protection coverages based on the county averages rather than the historical average of the individual farmer are still available as is another option designed for small farms: adjusted gross revenue coverage, which insures the revenue of the entire farm, including some livestock rather than a single crop.

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