United States General Accounting Office

GAO

Report to the Ranking Minority Member, Committee on Agriculture, Nutrition, and Forestry, U.S. Senate

September 1995

CROP INSURANCE

Additional Actions Could Further Improve Program's Financial Condition

GAO/RCED-95-269

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-265825

September 28, 1995

The Honorable Patrick J. Leahy
Ranking Minority Member
Committee on Agriculture, Nutrition,
and Forestry
United States Senate

Dear Senator Leahy:

This report responds to your request that we examine the adequacy of premiums to cover the claims projected to be paid in the crop insurance program and the U.S. Department of Agriculture's actions to reduce the losses caused by high-risk farmers, insure farmers on the basis of their actual production history, and set deadlines for farmers to purchase crop insurance before planting their crops. The report contains a matter for consideration by the Congress and makes a number of recommendations to the Secretary of Agriculture to improve the management and financial condition of the crop insurance program in these areas.

We are sending copies of this report to interested congressional committees; the Secretary of Agriculture; and the Director, Office of Management and Budget. We will also make copies available to others upon request.

If you or your staff have any questions, I can be reached on (202) 512-5138. Major contributors to this report are listed in appendix VI.

Sincerely yours,

John W. Harman
Director, Food and
Agriculture Issues

Executive Summary

Purpose

Since the 1930s, the federal government has helped farmers mitigate the risks of farming by offering subsidized crop insurance. However, after the crop insurance program was expanded in 1980 to include more crops and locations, it paid out about $3 billion more in claims through 1994 than it received in premiums from farmers and the federal government. The ratio of income from premiums to claims paid was thus about $1 to $1.40. The Congress required that, by October 1995, the program reduce its projected ratio to at least $1 in premiums to $1.10 in claims paid. Stated differently, insurance rates were to be set to generate income from premiums to cover at least 91 percent of the anticipated claims payments—termed "91-percent adequacy" in this report. The U.S. Department of Agriculture (USDA), the agency responsible for administering the crop insurance program, estimates that the government's costs for the program will total $1.5 billion for fiscal year 1996.

Concerned about the financial condition of the crop insurance program, the Ranking Minority Member of the Senate Committee on Agriculture, Nutrition, and Forestry asked GAO to examine whether USDA (1) set the insurance rates to achieve the legislative requirement of 91-percent adequacy, (2) reduced the losses caused by high-risk farmers, (3) based payments to farmers for claimed losses on their actual production history, and (4) set deadlines for farmers to purchase crop insurance before planting their crops.

Background

Under the federal crop insurance program, restructured by the Federal Crop Insurance Reform Act of 1994, farmers purchase insurance against crop losses from private insurance companies with whom USDA has contracted. Farmers choose both the proportion of the crop to be insured and the unit price (e.g., per bushel) at which any loss is calculated. They can choose to insure as much as 75 percent of their normal production or as little as 50 percent. With respect to the unit price, farmers choose whether to value their insured production at the full USDA-estimated market price or at a lesser percentage of the full price. USDA sets different premium rates for the various coverage and production levels.

These rates vary by crop, location (county), farm, and farmer. Consequently, hundreds of thousands of premium rates are in effect. To set premium rates, USDA calculates a basic rate for each crop in each county for the farmers who buy insurance at the 65-percent coverage level and whose normal production level is about equal to the average production in the county. From this basic rate, USDA makes adjustments to

establish rates for other coverage levels and for those farmers whose production levels are higher or lower than the county's average.

GAO examined the crop insurance program for six major crops insured by USDA—barley, corn, cotton, grain sorghum, soybeans, and wheat. These six crops have historically accounted for about 75 percent of the claims paid.

Results in Brief

USDA has improved the overall financial condition of the crop insurance program for the six crops reviewed by raising the premium rates, but the basic rates, on average, still do not meet the requirement of 91-percent adequacy set by the Congress. Moreover, the adjustments to the basic rates for other coverage and production levels are inaccurate. These problems in the rate structure are compounded by USDA's recent decision to increase the benefits to farmers who could not plant crops because of adverse weather conditions.

USDA now sets higher rates for high-risk farmers, which will help to reduce the government's losses. These higher rates will result in savings for the program, although not as much as USDA has estimated. USDA's estimate assumed a greater number of high-risk farmers than have actually been charged the higher rates.

USDA has also made changes to more accurately calculate farmers' production levels on the basis of historical experience. These changes should result in basing insurance on more accurate levels of production. However, two practices by USDA—limiting any reduction in the farmers' insured production level to no more than 10 percent annually and not routinely verifying the production history provided by farmers—reduce confidence that USDA pays claims on the basis of actual production levels.

Revised purchasing deadlines should better ensure that farmers buy crop insurance before the planting season is under way. However, USDA generally sets the same deadline for an area covering several states rather than considering local growing conditions. As a result, some farmers can more precisely evaluate growing conditions at planting time and therefore are more likely to purchase crop insurance only when growing conditions are poor.

Principal Findings

Changes in Premium Rates Have Improved Program's Financial Condition, but Some Rates Remain Too Low

On average, the basic premium rates for the six crops reviewed are 89 percent adequate for crop year 1995. However, the rates for some crops and locations and for some coverage and production levels are still too low. For the crops, the adequacy of the basic rate is the lowest for corn at 81 percent. Corn is also the largest crop insured under the program, accounting for over $250 million in annual premiums. For locations, the adequacy of the basic rates varies. For example, the basic rates in about half of the locations GAO reviewed—accounting for about 24 percent of the premiums—were less than 80 percent adequate. Even though the Congress allows rate increases of 20 percent annually, USDA has not increased the basic rates sufficiently to achieve the legislative requirement. USDA has acted primarily out of its historical concern that higher rates would drive farmers from the program. While this concern is legitimate, inadequate increases in the basic rates result in continuing losses.

Although the basic rates are approaching 91-percent adequacy, the majority of crop insurance is purchased at rates that are, with some exceptions, too low. For example, at the 50-percent coverage level, rates were about 11 percent lower than required. The rates were inadequate for all crops at the higher production levels and excessive for some crops at the lower production levels. For example, at the higher production levels, the rates for cotton were about 25 percent lower than required. In response to GAO's analysis of the rates for various production levels, USDA said that it would have an actuarial consultant review the rate-setting process.

While USDA has made improvements to the program's rate structure, in June 1995 it undermined these efforts by providing a higher level of benefits under the program's "prevented planting" provision. Under this provision, farmers who could not plant crops because of adverse weather conditions were formerly paid at 50 percent of the coverage they purchased. USDA raised this level to 75 percent without first adjusting the premium rates to account for this increase. USDA estimates that this change will cost about $135 million in additional claims. The Department had planned to recover the money paid on these claims through future rate increases, but its Office of General Counsel has since stated that the governing legislation does not allow it to do so. Therefore, USDA cannot recover these funds.

USDA Is Taking Action to Identify High-Risk Farmers

USDA has instituted a program to identify farmers who make frequent and substantial claims so that it can increase their premiums and/or reduce the production levels at which they are insured. USDA's program for targeting high-risk farmers for rate increases is generally sound and will reduce the government's outlays for crop insurance. However, GAO estimates that the program will produce initial savings of $33 million annually; this amount is less than half of USDA's estimated savings of about $70 million. The difference occurs because USDA assumed that it would have about double the number of farmers in the high-risk program than it has actually included.

Changes to Establish Accurate Production Levels Are Undermined by Lack of Verification of Farmers' Production History

To ensure that the claims paid for losses are based on farmers' normal production levels, USDA began in crop year 1994 to require farmers to purchase insurance at actual production levels or on the basis of a reduced estimate of production levels. This change will help ensure that farmers do not purchase insurance for production levels higher than they are likely to achieve and, as a result, make claims for production losses that are not real. GAO estimates that USDA's action should reduce the program's outlays initially by about $44 million annually; this amount is about 60 percent of USDA's minimum estimate of $75 million annually. The difference occurs largely because USDA's estimate did not take into account the decision to limit any reduction in farmers' insurable production levels to 10 percent annually.

Furthermore, in implementing this change USDA has not addressed a long-standing problem that GAO[1] and USDA's Inspector General have previously identified. That is, USDA does not require that a loss adjuster verify the accuracy of the production history supplied by the farmer when adjusting the claim.

Revised Purchasing Deadlines Reduce Risk to the Government

By moving the deadlines for purchasing crop insurance 30 days earlier in the year, as the Congress mandated, USDA has helped reduce the chance that farmers will buy crop insurance only when they determine that growing conditions are poor. However, USDA has not adjusted these deadlines for local growing conditions. Consequently, for about 12 percent of the deadlines GAO reviewed, farmers are still able to purchase crop insurance close to or during the planting period, improving their chances of predicting poor production.

[1]Crop Insurance: FCIC Should Strengthen Actual Production History Program Controls (GAO/RCED-89-19, Dec. 15, 1988).

Matter for Congressional Consideration

If the Congress wants to ensure the financial viability of the crop insurance program, it may wish to prevent USDA from making policy decisions about the program that are not funded under the crop insurance program's rate structure. To do so, the Congress would need to amend the Federal Crop Insurance Reform Act of 1994 to specifically prohibit the Secretary of Agriculture from making policy decisions that increase benefits without first increasing the rates to cover the anticipated claims.

Recommendations

GAO is making a number of recommendations to the Secretary of Agriculture to help improve the financial condition of the crop insurance program. In particular, GAO recommends that the Secretary direct the Deputy Administrator for Risk Management to annually raise premium rates up to the 20 percent authorized by the Congress, if needed to ensure that the rates meet the legislative requirement of 91-percent adequacy and cover future claims. As part of this rate-setting process, the Deputy Administrator should develop an annual report that shows the expected adequacy of premium rates each year, by crop and by state, so that USDA's management and the Congress can be kept informed of the program's financial condition. If the premium rates are not raised as required, the Deputy Administrator should include in the annual report the additional amount by which it has subsidized farmers' purchase of crop insurance when the rates are inadequate. GAO is also making recommendations on verifying farmers' production history and setting purchasing deadlines before the planting season.

Agency Comments and GAO'S Evaluation

GAO requested comments on a draft of this report from the Secretary of Agriculture. GAO then met with officials of the Department, including the Deputy Administrator for Risk Management, who provided USDA's comments. Overall, USDA agreed with GAO's conclusion that the basic premium rates for the 1995 crop year are 89 percent adequate. However, USDA believes that the program's financial soundness has been improved even more than these rates suggest when the other changes, such as increasing the premiums for high-risk farmers and improving the calculation of farmers' insured production levels, are taken into account. GAO recognizes that the changes USDA has made are improving the program's financial condition. GAO also recognizes that these changes may offset many of the shortfalls in premiums identified in this report. However, when the $135 million shortfall resulting from the decision about prevented planting is included, the net shortfall for the program as a whole is substantial. Although USDA generally agreed with the recommendations

to the Secretary of Agriculture, it disagreed with GAO's recommendation that USDA increase rates up to the 20 percent authorized by legislation. It cited its concern that abrupt increases may discourage farmers from purchasing more than the minimum mandatory level of crop insurance. While GAO also recognizes this possibility, the premium rates for many crop programs will continue to fall short of the legislative requirement unless rates are raised as much as allowed. USDA's comments and GAO's evaluation of them are discussed in chapters 2, 4, and 5.

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Abbreviations

GAO	General Accounting Office
USDA	U.S. Department of Agriculture

Introduction

The risks associated with natural disasters have always been a part of farming. Historically, farmers assumed these risks as part of the hazards of doing business. Since the 1930s, many farmers have been able to transfer part of the financial losses from these risks to the federal government through subsidized crop insurance. Before 1980, the crop insurance program was smaller, covering fewer crops and locations, and its premiums were generally adequate to pay the claims. Since the program was expanded in 1980 to cover more crops in more locations, it has not been financially stable, paying out more in claims in most years than the premiums the farmers and the government had paid in. To reduce the government's cost for the crop insurance program, the Congress required that, by October 1, 1995, the U.S. Department of Agriculture (USDA) lower the program's projected losses from over $1.40 in claims paid for every $1 of premiums taken in to $1.10 or less. In March 1994, USDA issued a plan explaining how it expected to achieve the desired improvement.

How Crop Insurance Works

Federal crop insurance is a program that is relatively simple in concept but highly complex in implementation. Farmers who buy crop insurance can file claims[1] for part of the money that they would otherwise lose when droughts, floods, infestations of insects, or other natural disasters keep them from harvesting their normal expected crop. The size of the claim depends on the extent of the crop loss and the amount of insurance coverage[2] the farmer has purchased.

Two types of coverage—catastrophic and additional—are available for most major crops[3] under changes made by the Congress in 1994. Under catastrophic coverage, the government provides a free minimum level of coverage to farmers for a small processing fee.[4] The government pays the premium for this insurance. Farmers must sign up for this program if they sign up for the annual USDA commodity programs; obtain USDA farm ownership, operating, or emergency loans; or contract to place land in the Conservation Reserve Program. They can sign up through their local Consolidated Farm Service Agency office—the USDA agency responsible

[1]USDA refers to claims payments as indemnities.

[2]USDA refers to insurance coverage as liabilities.

[3]USDA offers insurance for 51 major crops, which include about 400 subgroups of the 1,265 for which USDA paid disaster assistance in 1988-93. See Disaster Assistance (GAO/RCED-94-208R, May 12, 1994). For crops for which USDA does not offer insurance, a program similar to catastrophic insurance is provided at no cost to the farmer.

[4]The fee is $50 per crop per county, capped at $200 per county and $600 for all the farmer's crops in all counties. USDA can waive the fee in hardship cases.

for administering the program—or obtain their policy from a participating private insurance agent.[5]

The free catastrophic program protects farmers against extreme losses. The program pays farmers only when they are able to harvest less than 50 percent of their normal crop. The normal crop is determined on the basis of a farmer's past production history as reported to the USDA office or insurance agent. If a farmer does not report past production, that farmer's normal crop is determined by using a modified average production level for the county,[6] reduced by a discount, because of the uncertainty of the farmer's expected production. For losses in production[7] below the 50-percent level, farmers are paid 60 percent of USDA's estimated market price.

Farmers can purchase additional insurance from participating private insurance companies. As authorized by the 1980 act redesigning and expanding the program (P.L. 96-365, Sept. 26, 1980), the managers of USDA's crop insurance program have entered into reinsurance agreements authorizing the participating insurance companies to sell the insurance and process the resulting claims. The government pays part of the farmers' premium. Farmers who purchase this additional insurance must choose both the coverage level (the proportion of the crop to be insured) and the unit price (e.g., per bushel) at which any loss is calculated. With respect to level of production, farmers can choose to insure as much as 75 percent of normal production (25-percent deductible) or as little as 50 percent of normal production (50-percent deductible) at different price levels.[8] With respect to the unit price, farmers choose whether to value their insured production at USDA's full estimated market price or at a percentage of the

[5]The crop insurance program is funded through the Federal Crop Insurance Corporation, a wholly owned government corporation created in 1938 (7 U.S.C. 1503). Under USDA's fiscal year 1995 reorganization, the corporation's employees are within the Consolidated Farm Service Agency—the agency that now administers the crop insurance program.

[6]This modified average is generally calculated by multiplying the production level USDA has assigned the farmer for calculating deficiency payments under the income support program by the result of dividing USDA's records of the average production in the county over 10 years by the average production USDA assigned all farmers in the county under the income support program.

[7]USDA refers to the production level as the yield.

[8]As noted above, the free catastrophic insurance insures 50 percent of production at 60 percent of USDA's estimated market price. The additional insurance allows farmers to increase coverage above the 60-percent price level. For crop year 1996, USDA will offer production coverage at the 50-percent level, increasing in 5-percent increments to 85 percent. However, the 80- and 85-percent coverage will be offered only on a pilot basis.

full price. USDA sets the premium rates and assigns correspondingly higher premiums for higher production and price levels.[9]

The following example illustrates how a claims payment is determined. A farmer whose normal crop production averages 100 bushels of corn per acre and who chooses to buy insurance at the 75-percent coverage level will be guaranteed 75 percent of 100 bushels, or 75 bushels per acre. Assuming that the farmer had chosen the maximum price coverage and that USDA had estimated the market price for corn at $2 per bushel, the farmer would have total coverage of $150 per acre. Should something like drought cut the farmer's actual harvest to 25 bushels, the farmer will be paid for the loss of 50 bushels per acre—the difference between the insured production level of 75 bushels and the actual production of 25 bushels. The insurance would pay the farmer's claim at $2 x 50 bushels, or $100.

In addition, the crop insurance program's "prevented planting" provision pays farmers who have purchased insurance but never planted crops because of adverse weather conditions. These farmers are entitled to claims payments ranging from 35 to 50 percent of the coverage they purchased, depending on the crop.

Insurance Premium Rates Are Based on Risk, Which Typically Varies by Location, Farm, and Farmer

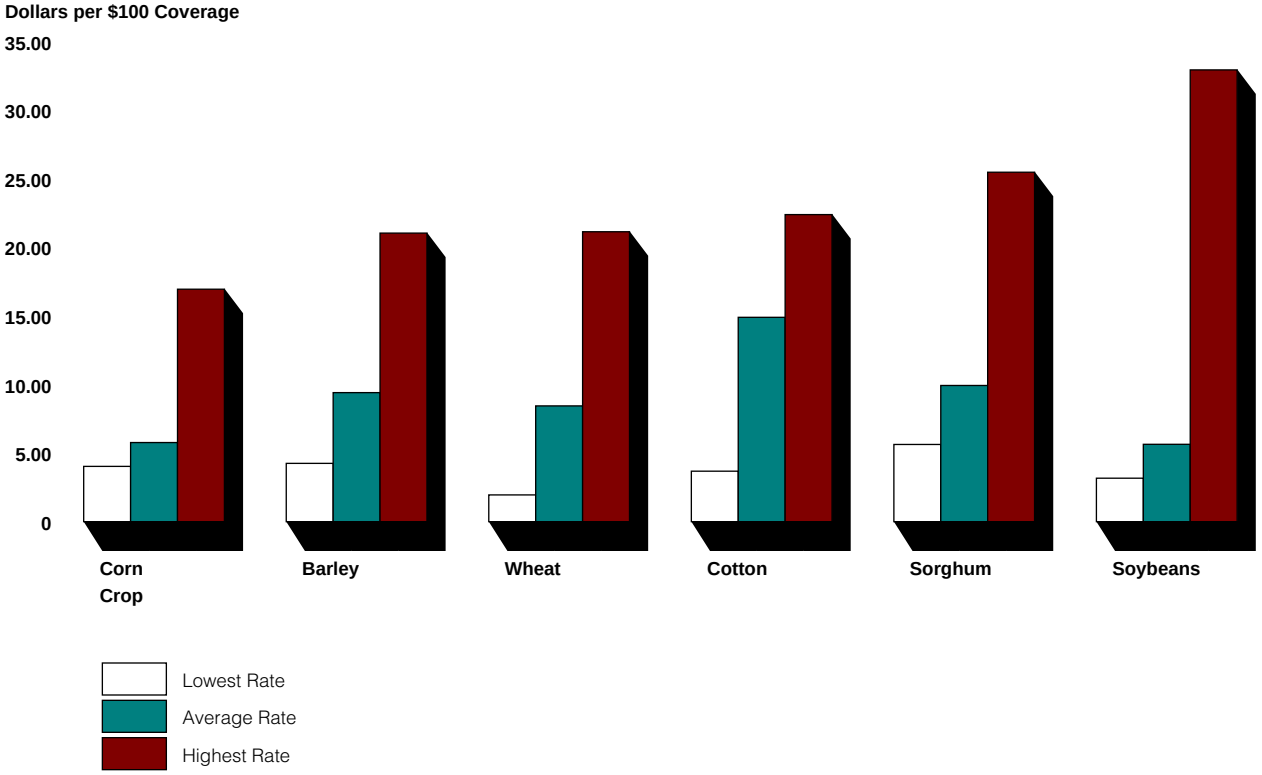
Critical to the success of the crop insurance program is aligning the premium rates with the risk each farmer represents. The riskiness of growing a particular crop varies from location to location, from farm to farm, and from farmer to farmer. If the rates are too high for the risk represented, farmers are less likely to purchase insurance, lowering the program's income from premiums. Conversely, if the rates are too low, farmers are more likely to purchase crop insurance, but because the rates are too low, the income from premiums will be insufficient to cover the claims.

To align crop insurance premium rates with the risk represented, USDA establishes rates that vary by crop, location (county), farm, and farmer. Because of all the combinations involved, literally hundreds of thousands of premium rates are in place. For this review, we examined crop insurance rates at the state level for six major crops: barley, corn, cotton, grain sorghum, soybeans, and wheat. For these crops, the average

[9]The amount of USDA's subsidy varies by the level of coverage the farmer chooses. The maximum subsidy is calculated on the basis of the 65-percent coverage level and 100-percent of USDA's estimated market price. This subsidy is about 42 percent of the total premium. USDA provides the same dollar subsidy for the 75-percent coverage level.

premium rates for crop insurance purchased at the 65-percent coverage level in 1994 varied widely among the states. As shown in figure 1.1, the average rates[10] ranged from a low of $1.95 per $100 of insurance coverage for wheat in one state to a high of $32.94 per $100 of insurance coverage for soybeans in another state.

Figure 1.1: Highest, Lowest, and Average Premium Rates for Six Crops, 1994



Note: Rates are at the 65-percent coverage level. The averages are calculated by dividing the total premiums (including the government's subsidy) by the total insurance coverage (the production level multiplied by the coverage and price levels). The averages are calculated for each state and for all states combined.

Source: GAO's analysis of USDA's data.

[10]USDA refers to this figure as the earned premium rate.

To adjust the hundreds of thousands of rates it publishes each year, USDA goes through a multistep process involving considerable computer analysis and judgment. USDA's objective is to set the rates that each farmer pays according to the risk associated with the farmer's location, crop, past production, and past losses. For the six crops we reviewed, USDA begins its rate-setting process each year by looking at the crop insurance experience over the past 20 years for each county and state. On the basis of a county's and state's historical experience, USDA sets a basic rate for each crop in each county at the 65-percent coverage level for average production. Using this basic rate, USDA makes adjustments to establish rates for other coverage levels and for farmers whose production levels are higher or lower than the county's average. This latter adjustment is based on USDA's research showing that farmers with higher-than-average production levels are less likely to experience losses.

USDA aligns rates with risk in several other ways as well. For example, it imposes an additional premium on those farmers who insure individual fields[11] rather than all fields combined, purchase hail insurance, and are high risk as evidenced by frequent and high experience with claims. Moreover, for those farmers who have production records for fewer years than required to establish the amount of production that can be insured, USDA uses the modified average production level for their county, adjusting the production down according to the number of years for which the farmers have provided records. USDA's rate-setting methodology is described in more detail in appendix I.

Program Has History of Financial Losses

Since 1980, when the Congress redesigned and expanded the crop insurance program to be the primary form of agricultural disaster assistance, the program has not been financially sound. USDA has regularly paid out more in claims than it received in premiums paid by farmers and the government. Two key requirements of the 1980 legislation were to (1) operate the program on a financially sound basis and (2) eliminate the need for government-funded disaster assistance by having most farmers buy crop insurance.[12] The program has never met either requirement.

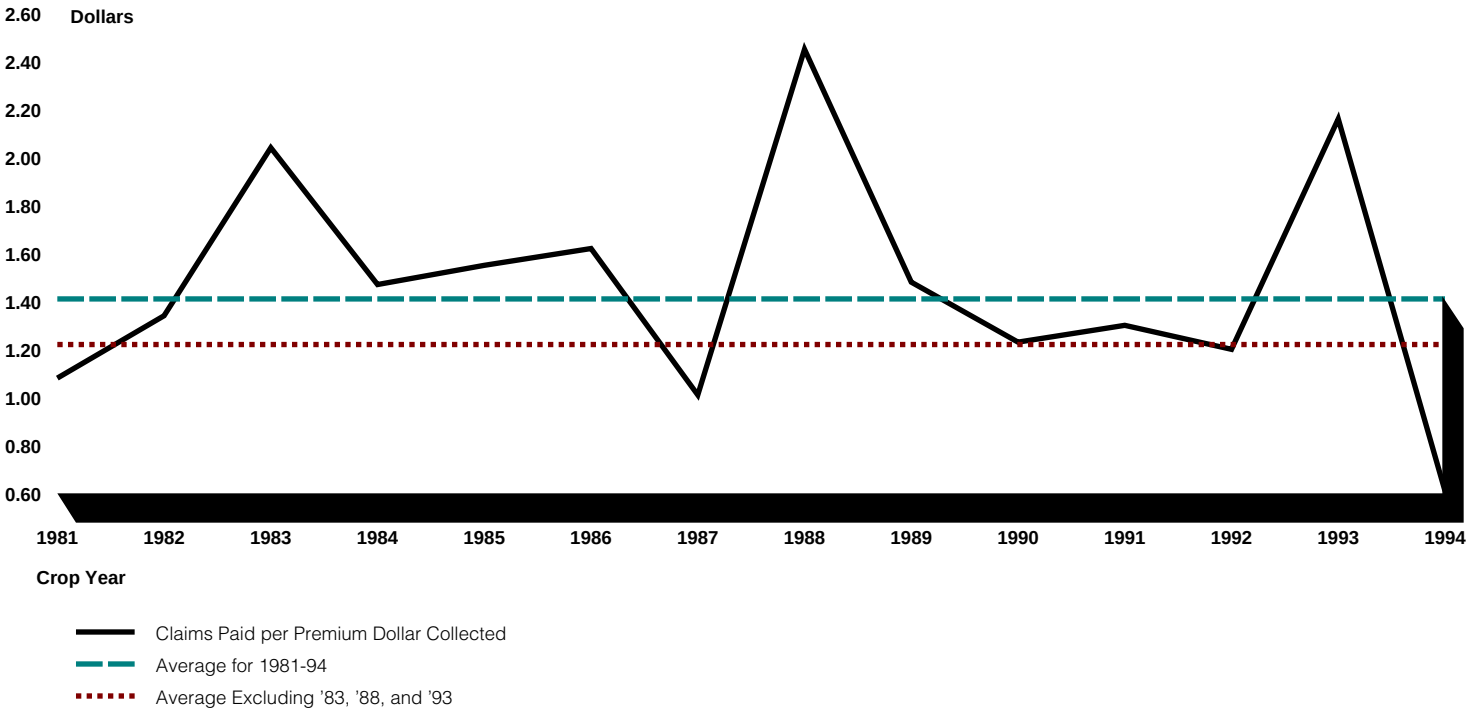
First, to be financially sound, the program needed to realize more income from premiums, including the government's subsidy, than it paid to settle farmers' claims so that it could build up a cash reserve to pay farmers'

[11]USDA refers to this approach as unit coverage.

[12]Beginning in the mid-1970s, disaster assistance has often been provided on an ad hoc basis when widespread weather-related damage occurs.

claims in years of catastrophic loss. As shown in figure 1.2, the claims paid per $1 of premium (including the government's subsidy) for crop years 1981 through 1994 varied greatly from year to year, averaging $1.41. During this period, claims exceeded premiums by a total of $3.3 billion. The highest claims payments in relation to premiums were in 3 catastrophic years—resulting from severe droughts in 1983 and 1988 and excessive moisture and severe flooding in 1993. Excluding the 3 catastrophic years, the average claim per dollar in premiums was $1.22. Thus, even in years without catastrophic losses, the program consistently operated at a loss; catastrophic years just made the situation worse.

Figure 1.2: Claims Paid Per Premium Dollar Collected, Crop Years 1981-94

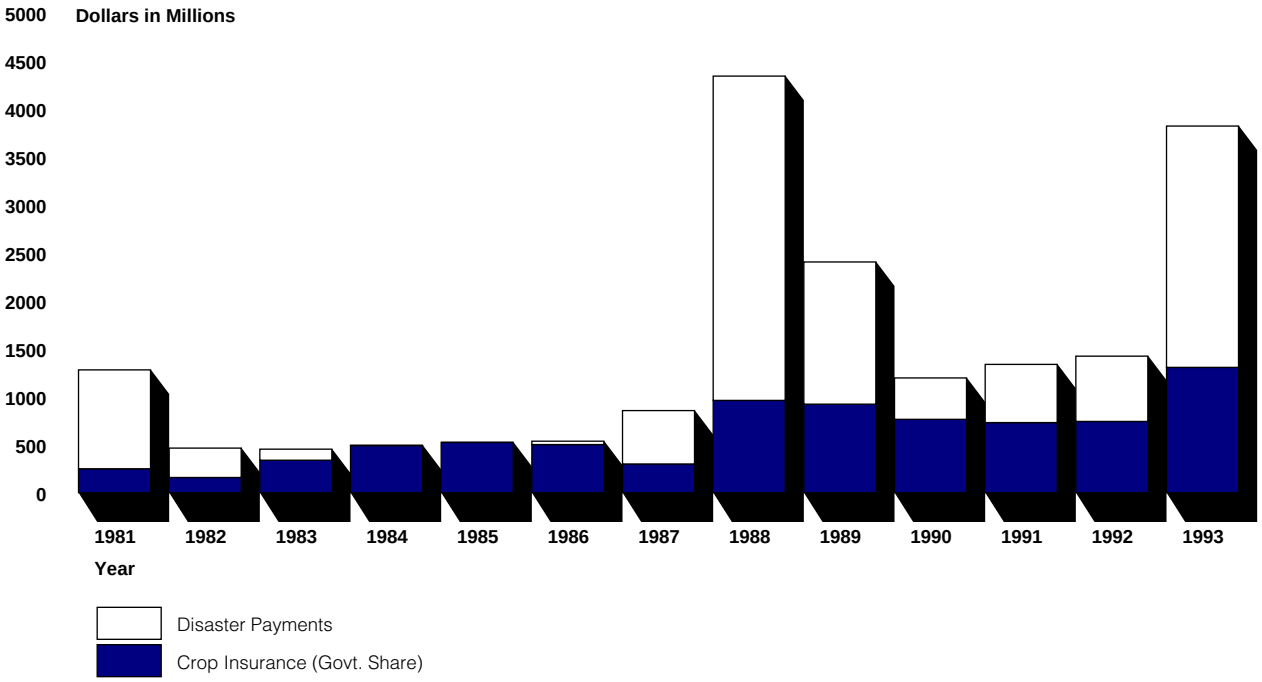


Source: GAO's analysis of USDA's data.

Moreover, the Congress's goal of having most farmers buy crop insurance to eliminate the need for direct government disaster payments was not

reached. Farmers never insured more than 40 percent of their eligible acres, and the pressure for direct disaster assistance continued. In fact, the Congress passed emergency disaster legislation to cover several crop years in the 1980s and each crop year from 1988 through 1993. Over the period 1981-93, USDA paid farmers about $11 billion in disaster assistance payments. Adding this to the government's $8 billion share of the cost of crop insurance, the government's spending to assist farmers who lost crops exceeded $19 billion over the 13-year period. Figure 1.3 depicts the outlays by year.

Figure 1.3: USDA's Crop Insurance and Disaster Assistance Outlays, 1981-93



Notes: Data on disaster assistance payments for 1988 through 1993 are by crop year. All other data are by fiscal year.

Source: GAO's analysis of USDA's data.

The crop insurance program's financial condition is influenced by several key management activities that, taken together, determine whether the program will produce sufficient income to cover claims. These key activities are

- setting appropriate premium rates,
- setting and enforcing the rules for calculating a farmer's normal production level,
- establishing the periods when insurance can be sold, and
- setting and enforcing the rules for adjusting claims.

Historically, these activities, individually and collectively, have prevented the crop insurance program from reducing its losses to an acceptable level. As we reported throughout the 1980s, USDA's crop insurance program unsuccessfully attempted to achieve financial soundness at the same time it was rapidly expanding to include more crops and locations.[13] In 1993, the crop insurance program's acting manager acknowledged to a congressional committee that during the 1980s, the agency had focused "solely" on improving participation in the program and "sacrificed" actuarial soundness.

Moreover, we and USDA's Inspector General reported problems with the private insurance companies' claims adjustments. In 1993, the Inspector General estimated an overpayment rate for claims of about 9 percent—an improvement over the 16-percent overpayment rate in 1987 payments that we had previously reported.[14]

Furthermore, we had previously identified inherent problems with crop insurance and problems in the design of the crop insurance program that made it exceedingly difficult for the program to be financially sound.[15] Crop insurance is an inherently difficult proposition because many weather-related hazards can reduce crop production over large areas of

[13]Crop Insurance: FCIC Should Strengthen Actual Production History Program Controls(GAO/RCED-89-19, Dec. 15, 1988); Crop Insurance: Federal Crop Insurance Corporation Needs to Improve Decision-Making (GAO/RCED-87-77, July 23, 1987); More Attention Needed in Key Areas of the Expanded Crop Insurance Program (GAO/RCED-84-65, Mar. 14, 1984); and Concerns About the Actuarial Soundness of the Federal Crop Insurance Program (letter dated Aug. 10, 1982).

[14]Federal Crop Insurance Corporation—Crop Year 1991 Claims, USDA Office of Inspector General, Audit Report No. 05600-4-Te (Sept. 30, 1993); and Crop Insurance: Private Company Loss Adjustment Improving, but Overpayments Still High (GAO/RCED-90-32, Nov. 7, 1989). USDA's estimate was based on a statistical sample of all payments, whereas our estimate was based on a statistical sample of payments over $20,000.

[15]Crop Insurance: Federal Program Faces Insurability and Design Problems (GAO/RCED-93-98, May 24, 1993).

the nation, thereby increasing the chance that a substantial number of policies will require payments during the same year. This widespread impact reduces the probability that financial stability can be achieved because risk pooling—the concept that limited premiums are paid by many to fund claims paid to relatively few—is less likely to be successful if most of the insured farmers simultaneously face severe losses.

For example, in the severe drought of 1988, 92 percent of the 34,773 crop insurance policies purchased by wheat farmers in North Dakota and Montana resulted in payments for claims, as did 58 percent of the 65,159 policies purchased by corn farmers in Iowa, Minnesota, and Illinois. Similarly, in 1993—a year with extensive moisture and flooding—72 percent of the 71,131 crop insurance policies purchased by Iowa and Minnesota corn farmers resulted in payments for claims, as did 56 percent of the 54,909 policies purchased by soybean farmers in the same two states.[16]

Statutes and regulations designed to encourage participation in the program have further limited USDA's ability to make the program financially sound because they encourage participation at the expense of appropriate rates. These provisions include (1) allowing all farmers to participate regardless of risk (entitlement); (2) allowing farmers to insure for production levels higher than would be expected on the basis of their production history, thereby increasing the likelihood that claims will be paid; (3) restricting USDA's ability to increase premiums; and (4) allowing farmers more time to assess current growing conditions before purchasing insurance, which enables them to better determine the likelihood of loss and to purchase insurance when that likelihood is high.

The Congress Enacted Various Measures to Improve Crop Insurance Program's Financial Soundness

As a result of persistent problems and high costs in the delivery of crop insurance to farmers, potential reform of the crop insurance program was a major focus in developing the 1990 farm bill. However, congressional and administration officials were unable to reach agreement on a design for the crop insurance program that fostered high participation, eliminated the need for expensive ad hoc disaster assistance legislation, and stayed within budget guidelines. Consequently, in the 1990 legislation the Congress reemphasized the need for the crop insurance program to

[16]Such widespread claims far exceeded the premiums paid. For crop year 1993, farmers in Iowa and Minnesota received payments for damages to their corn and soybean crops totaling $542 million. This amount was about 6 times more than the $97 million in premiums collected (including the government's subsidy). It would take another 5 years of the same amount of premiums, without any claims, to collect enough premiums to equal the claims paid in 1993.

achieve financial soundness by mandating that USDA raise the premium rates, where necessary. However, the Congress limited the increase for any farmer to no more than 20 percent per year.

Continuing to be concerned about the losses in the crop insurance program, the Congress, in the Omnibus Budget Reconciliation Act of 1993, directed USDA to improve the crop insurance program's financial condition. The act required USDA, by October 1, 1995, to lower the program's projected losses (loss ratio) from an average of over $1.40 paid in claims for every $1.00 of premium taken in down to $1.10. In response to the legislation, USDA developed a blueprint explaining how it expected to improve the program's financial condition by reducing losses to the level specified in the legislation.

In October 1994, the Congress made additional changes. Under the Federal Crop Insurance Reform Act of 1994 (P.L. 103-354, Oct. 13, 1994, title I), the Congress combined the existing crop insurance program and the new catastrophic insurance program for which USDA pays the farmers' premiums. By adding the catastrophic coverage, the Congress planned to eliminate the need for ad hoc, emergency disaster assistance for crop losses. This change should resolve the inherent conflict in the program between expanding participation and achieving financial soundness. The legislation also repeated the requirement that USDA lower the projected loss ratio to $1.10 in claims paid for every $1 in premiums on and after October 1, 1995. This requirement remains in effect through September 30, 1998; thereafter, the amount paid in claims must be reduced to $1.075 for every $1 in premiums. The act also specifically provided that USDA establish insurance rates that will fulfill the requirement for 1998.

The estimated cost of the integrated program, according to USDA's budget request for fiscal year 1996, is $2.1 billion, which will be partially offset by about $600 million in premiums paid by farmers. Thus, the net cost to the government is estimated at $1.5 billion. The estimated outlays consist of about

- $1.6 billion in payments of claims to farmers and
- $500 million for USDA's and the insurance companies' operating and delivery costs.

USDA's Blueprint Describes Plan for Achieving Improved Financial Condition

In response to the 1993 legislation, USDA released its Blueprint for Financial Soundness on March 2, 1994. USDA described 18 initiatives intended to improve the financial stability of the crop insurance program. USDA had started most of these initiatives before the legislation was enacted. The initiatives most critical to promoting the success of the crop insurance program are setting appropriate rates, charging higher rates to high-risk producers. establishing accurate production levels, and setting appropriate deadlines for purchasing insurance.

In September 1994, USDA contracted with the actuarial firm of Milliman and Robertson to perform an overall evaluation of its rate-setting process. This review is expected to be completed by September 1996. The last comprehensive review of USDA's rate-setting methodology was completed in 1983 by the same firm.

Objectives, Scope, and Methodology

Concerned about the financial condition of the crop insurance program, the Ranking Minority Member of the Senate Committee on Agriculture, Nutrition, and Forestry asked us to examine whether USDA (1) set insurance rates to achieve the legislative requirement of collecting premiums sufficient to cover 91 percent of the claims paid—termed "91-percent adequacy" in this report; (2) reduced the losses caused by high-risk farmers; (3) based claims payments on farmers' normal production levels; and (4) set deadlines for farmers to purchase crop insurance before planting begins. These activities, taken together, substantially determine the program's financial soundness.

As part of our review, we examined an initial draft of USDA's blueprint. On the basis of this analysis, we briefed crop insurance program officials on actions that we believed could be taken to reduce the program's losses. In response, USDA added more specific time frames for accomplishing tasks.

To determine the extent to which USDA's premium rates for crop insurance were adequate under the legislative requirement, we met with crop insurance program officials at USDA's headquarters in Washington, D.C., the Department's main crop insurance field office in Kansas City, Missouri, and selected regional service offices. We reviewed USDA records and past studies to understand the Department's actions to set premium rates. We also obtained USDA's computer files for crop insurance to evaluate the adequacy of the rates.

In addition, we interviewed insurance representatives from the private sector and reviewed insurance literature. We also reviewed previous reports by GAO and USDA's Inspector General.

For our review, we evaluated the adequacy of the premium rates for 1991-95 for six of the seven major crops insured by USDA. We selected these six crops for review because they were the largest programs for which USDA used the same methodology to set the rates. For 1994, the income from premiums for these six crops totaled about $721 million.[17] For these six crops, the losses experienced were at about the same level—$1.37 compared with $1.41 in claims payments for each $1 in income—as in the overall program for the period 1981 through 1994. As shown in table 1.1, the six crops account for 74 percent of the claims paid and 76 percent of the premiums collected under the program.

Table 1.1: Premiums and Claims Payments for Crops Reviewed Compared With All Crops, Crop Years 1981-94

Dollars in millions

Crop	Premiums	Percentage of total	Claims paid	Percentage of total
Wheat	$1,508	19	$2,333	21
Cotton	772	10	1,148	10
Corn	2,002	25	2,175	19
Sorghum	219	3	336	3
Soybeans	1,383	17	2,006	18
Barley	196	2	326	3
Total for 6 crops reviewed	$6,079	76	$8,324	74
Other 45 crops	$1,890	24	$2,919	26
Total for 51 crops	**$7,969**	**100**	**$11,242**	**100**

Note: Columns may not add to total because of rounding.

Source: GAO's analysis of USDA's data.

In the absence of a USDA annual or periodic evaluation showing how the rates it establishes each year compare with the rates that its historical data indicate are needed to pay future claims, we developed benchmark rates to measure the adequacy of USDA's basic premium rates that it sets at the 65-percent coverage level and average production level. We developed the benchmark rates by generally following USDA's methodology for setting premium rates. USDA uses the past 20 years' claims experience to set its rates each year. USDA believes that the past 20 years' claims experience

[17]In 1994, USDA, for its 51 crops, collected premiums totaling $949 million for $13.6 billion of insurance coverage on about 800,000 policies.

provides the basis for setting rates each year that are needed to produce sufficient income from premiums to pay future claims.[18] For example, if claims payments averaged $100 over the past 20 years and the insurance sold averaged $1,000 in coverage, the benchmark rates would be 10 percent of the amount of the insurance coverage sold, or $10 per $100 of coverage. Although the future claims paid would vary from year to year, they would be expected to average about $100 per year. Thus, to achieve a rate that is 91 percent adequate, USDA would need to set the rate at $9.10.

Following USDA's methodology, we used 20 years of historical data for the insurance claims paid and insurance coverage sold to calculate a benchmark premium rate for each crop in each county and state. Because USDA sets its basic rates at the county level on the basis of the historical experience in the county and state, we calculated benchmark rates for each crop overall, weighting the county experience to the state crop, national crop, and national level (six crops combined). We then compared these benchmark rates with USDA's basic premium rates for the year reviewed to assess the adequacy of USDA's rates. Appendix II provides more detail on our methodology. Appendix III lists the results of our analysis by crop, state, and year.

USDA applies mathematical factors to its basic rates to set rates for coverage and production levels above and below those used to set the basic rates. To determine the accuracy of these other rates, we compared the relative losses at the various levels over the period 1990 through 1994. Appendix II provides more detail on our methodology.

To evaluate the effectiveness of USDA's program to target high-risk farmers for individual rate increases, we identified the policyholders that USDA targeted for 1993, the most recent information available at the time of our analysis. We used USDA's historical results from 1992 to estimate the reductions in claims and increases in premiums that would result from targeting high-risk farmers. Appendix IV provides more information on our methodology.

To determine the effectiveness of USDA's revised rules for estimating a farmer's expected production level, we analyzed USDA's experience for crop year 1994. We calculated the difference between the production level each farmer qualified for in 1994 and the production the farmer would have qualified for if the 1993 rules had continued. Appendix V provides more information on our methodology.

[18]The governing legislation does not permit USDA to set rates to recoup previous losses.

To determine whether USDA's deadlines for purchasing crop insurance were appropriate, we determined the extent to which USDA permitted farmers to purchase crop insurance after the planting period had begun. We compared the deadlines for purchasing insurance with the initial date USDA establishes for planting. We briefed USDA officials on our initial comparison, showing them that many deadlines needed to be set earlier. They included in their blueprint a plan for changing these deadlines. We compared these revised deadlines with the initial dates set for planting.

We conducted our review from August 1993 through August 1995 in accordance with generally accepted government auditing standards. Although we did not assess the accuracy and reliability of USDA's computerized databases, we used the same files that USDA uses to set its rates.

Changes in Premium Rates Have Improved Program's Financial Condition, but Many Rates Remain Too Low

For the six crops we reviewed, the basic premium rates are, on average, approaching the level necessary to achieve the legislative requirement of 91-percent adequacy. The basic rate is set, by county, for the 65-percent coverage level and the average production level for each crop. However, for certain crops in certain states, these basic rates remain too low. USDA has generally not raised rates sufficiently because it was concerned that higher rates would reduce sales of crop insurance.

While the basic rates are approaching the 91-percent adequacy requirement, the rates for coverage higher or lower than the basic rates have not been set to ensure that premiums are aligned with risk. Most farmers purchase crop insurance coverage at these other rates. USDA has not adjusted the mathematical factors applied to the basic rates to calculate these other rates because of the time and resources required. However, USDA is currently reviewing these factors.

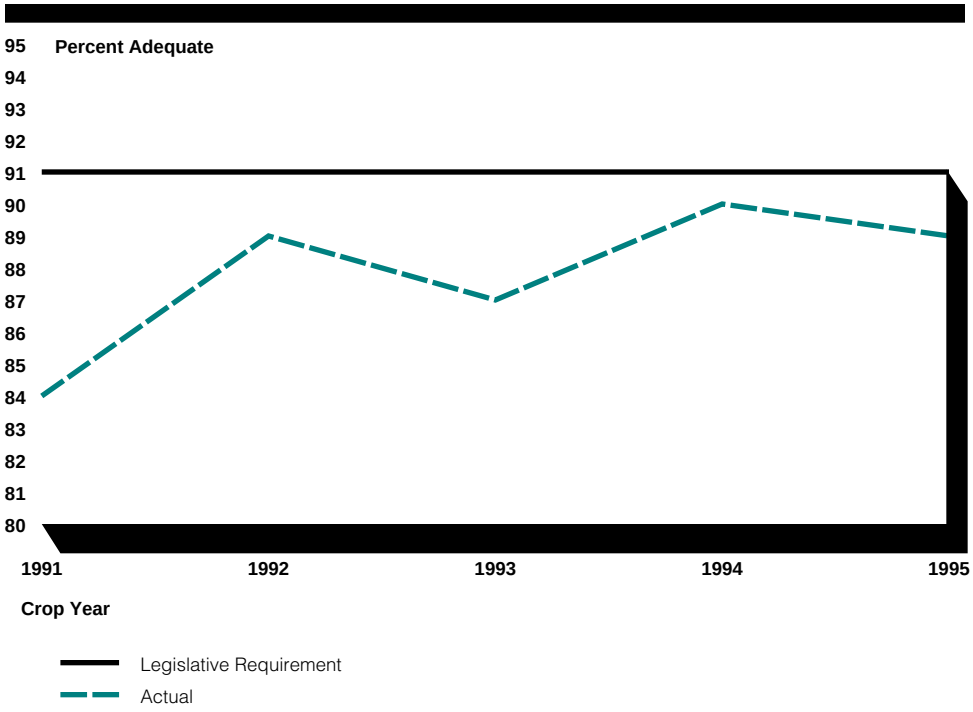
Finally, while the program has been moving in the direction of adequate income to cover 91 percent of the claims paid, USDA recently made a decision that further calls into question the program's ability to meet that requirement. USDA increased the benefits provided under the program's "prevented planting" provision for crop year 1995 without first adjusting the premium rates. USDA acknowledges that this change will result in payments of up to $135 million in claims.

Basic Rates, on Average, Are Nearly Adequate to Achieve Legislative Requirement

According to our analysis of the basic premium rates USDA established for the six crops reviewed, the rates overall are nearly adequate to meet the Congress's legislative requirement of charging premiums that are projected to cover at least 91 percent of claims—resulting in $1 in income from premiums for every $1.10 paid in claims.

As figure 2.1 shows, USDA's basic rates for the six crops reviewed were about 84 percent adequate overall in 1991, and this percentage increased slightly in the following years. The rates in 1994 and 1995 were just below the requirement of 91-percent adequacy. In 1995, the rates were 89 percent adequate, meaning that USDA should receive about $0.98 in income for every $1.10 in claims paid.

Figure 2.1: Adequacy of USDA's Premium Rates for Six Crops Combined Compared With Legislative Requirement, 1991-95



Note: The adequacy of the premium rates is measured at the 65-percent coverage level and average production level.

Source: GAO's analysis of USDA's data.

Basic Rates for Some Crops and States Do Not Meet Legislative Requirement

While the overall basic rate is approaching the requirement of 91-percent adequacy for the six crops combined, the ultimate achievement of this requirement is being hampered because the basic rates for some crops are not adequate. Furthermore, the basic rates in many states are not adequate. USDA did not raise the rates for these programs as much as it could have because of concern that higher rates would discourage farmers from buying crop insurance.

Rates for Some Crops Do Not Meet Requirement

As table 2.1 shows, USDA's basic premium rates for some crops in 1995 are still well below the 91-percent requirement. For the six crops reviewed, the rates for cotton and soybeans exceed the requirement of 91 percent, while the others fall short. In fact, the corn rates—accounting for 37 percent of the crop insurance business for the six crops—were the farthest from the requirement at 81 percent. This shortfall occurred

because 1993 (when claims payments were very high) was added to the rolling 20-year database used for setting rates and 1973 (when claims payments were lower) was deleted, without a corresponding increase in the premium rates.

Table 2.1: Adequacy of 1995 Premium Rates for Six Major Crops

Crop	Total premiums (millions)[a]	Number of state crop programs[b]	Rate needed per $100 coverage	1995 rate charged per $100 coverage	Adequacy of 1995 rate (percent)
Cotton	$130	17	$16.53	$16.87[c]	102
Soybeans	128	31	5.24	$4.92	94
Wheat	158	38	9.63	8.36	87
Grain sorghum	22	25	10.80	9.39[c]	87
Barley	14	29	11.19	9.62	86
Corn	268	43	6.64	5.37	81
Total/average	$721	183	8.25	7.34	89

Notes: Columns do not add to total because of rounding. Rates are at the 65-percent coverage level and average production level.

[a]Premiums are for crop year 1994 because 1995 was not complete at the time of our review.

[b]As discussed in chapter 1, we based our analysis of the adequacy of the rates for each crop in each state, which we identify as one state crop program.

[c]From 1991 to 1995, the basic rate increased by 30 percent for cotton and by 35 percent for grain sorghum. These were the largest increases for the six crops we reviewed.

Source: GAO's analysis of USDA's data.

Our analysis of the adequacy of the basic rates is consistent with USDA's blueprint, which stated that only about 30 percent of the crops the Department analyzed met the required level of adequacy.

The results of both our and USDA's analysis depend heavily on the number of years included and the weight assigned to each year. For example, in 1983 USDA's consultant suggested changing from the current methodology of giving equal weight to each year of the 20 years' experience to giving greater weight to more recent years' experience. Specifically, the consultant suggested assigning a 50-percent weight to the experience for the most recent 10 years and a 50-percent weight to the experience for all

available years.[1] We found that the consultant's approach had a significant impact on the premium rates for three crops. For soybeans, barley, and wheat, the adequacy was reduced from 94 to 87, 86 to 77, and 87 to 76 percent, respectively. The impact is greatest on these three crops because of changes in the level of losses that have occurred in the most recent 10 years. In response to our evaluation, USDA's senior actuary for crop insurance told us that the Department will have its actuarial consulting firm evaluate whether the trend in losses in recent years requires a change in USDA's methodology. He said this evaluation would be completed in late September 1995.

Rates Set for Many States Are Inadequate

For the 183 state crop programs[2] we examined, only 54 had basic rates that were at least 91 percent adequate for 1995. These 54 programs were generally those that had the greatest volume of insurance. For the remaining 129 programs, 40 were approaching 91-percent adequacy—ranging from 80 to just under 91 percent. The other 89 programs, representing about 24 percent of the crop insurance premiums for the six crops in 1994, had basic rates that were less than 80 percent adequate. As table 2.2 shows, many of these 89 programs had not charged adequate rates for the entire 1991-95 period. As the table also shows, the size of these state programs varied significantly, from as low as $100 in premium income annually to as much as $61 million.

[1]According to an expert on actuarial science, Charles L. McClenahan, the period of experience selected involves judgment, but whatever period is used must be representative. He noted that there "is a natural preference for using the most recent incurred experience available since it is generally most representative of the current situation." Foundations of Casualty Actuarial Science (New York: Casualty Actuarial Society, 1990), pp. 40-41.

[2]We examined the adequacy of the rates for each of the six crops in each state where insurance is offered—such as the average rate for corn in Iowa—and refer to each as a "state crop program."

Table 2.2: State Crop Programs With Premium Levels That Were Less Than 80 Percent Adequate, Crop Years 1991-95

Year	Number of state crop programs	Range of income from premiums in state crop programs		Total premiums
		Low	High	
1995[a]	89	$100	$61,372,061	$173,828,060
1994	76	100	6,559,380	53,261,819
1993	79	240	4,476,928	43,581,227
1992	75	181	5,088,520	49,947,988
1991	80	861	6,028,470	48,817,991

[a]Because the amount of premiums for 1995 is not yet complete, we used the amount of 1994 premiums for each state to provide perspective on the size of the state crop programs.

Source: GAO's analysis of USDA's data.

The increase in the number of programs that are less than 80 percent adequate for 1995 resulted in part from the addition of large corn programs in four states, totaling about $119 million in premiums. These four programs had been 80 percent or more adequate—often more than 90 percent adequate—in 1991-94 but this percentage dropped dramatically in 1995. This drop occurred because (1) the severe losses in 1993 were added to the historical database for establishing the 1995 rates and a year from the 1970s when losses were lower was deleted and (2) USDA did not increase the rates as much as it could have for corn in these four states.

Our analysis of the adequacy of the basic rates is consistent with USDA's blueprint, which stated that some areas of the country met the legislative requirement while others did not.

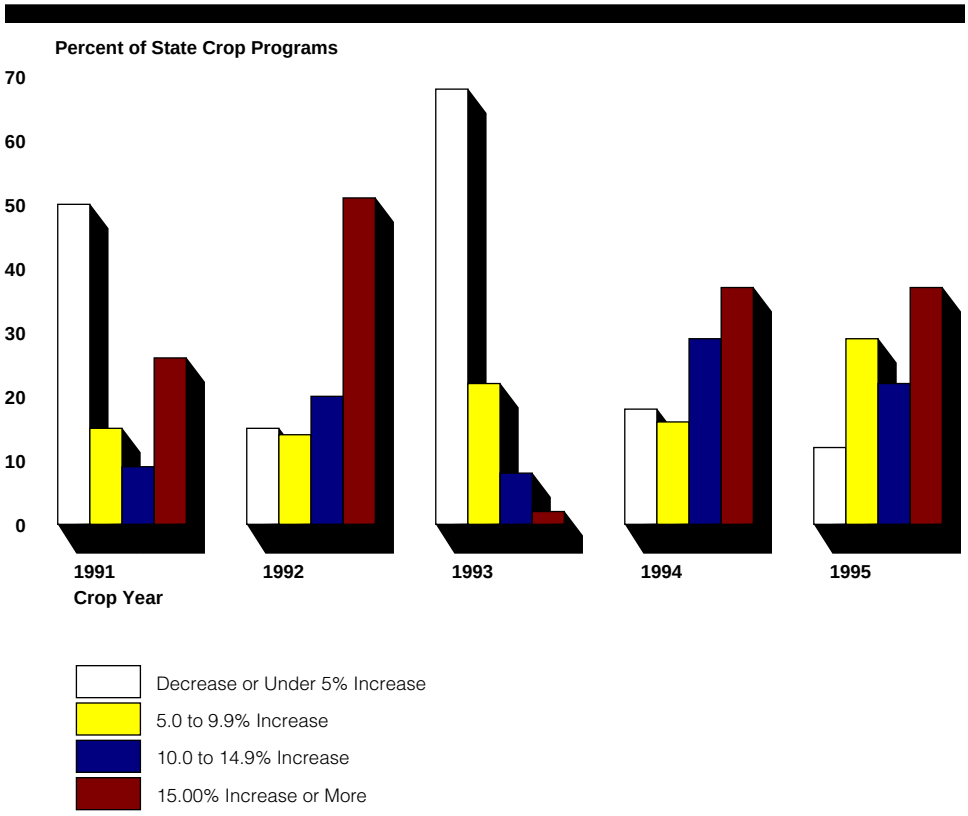
USDA Did Not Raise Rates as Much as It Could Have Without Exceeding Legislative Limit

For the state crop programs that were less than 80 percent adequate, USDA often did not sufficiently increase the basic rates where necessary. Rates that are less than 80 percent adequate in any year would require at least a 14-percent increase (of 80 percent) to reach the 91-percent adequacy requirement. USDA did not always raise the rates sufficiently even though most of the increases imposed were less than the 20-percent statutory maximum.

USDA increased the rates most in 1992 and least in 1993, as shown in figure 2.2. In 1992, USDA increased 71 percent of the rates for state crop programs by 10 percent or more. In contrast, in 1993 USDA increased the rates for only 10 percent of the state crop programs by 10 percent or more, while

increasing the rates for 68 percent of the state crop programs by less than 5 percent. For 1995, USDA again moved towards greater increases by raising the rates for 59 percent of the state crop programs by 10 percent or more.

Figure 2.2: Rate Increases for State Crop Programs That Were Less Than 80 Percent Adequate in Crop Years 1995 and 1991-94



Note: Rate increases and rate adequacy are measured at the 65-percent coverage level and average production level.

Source: GAO's analysis of USDA's data.

USDA has not sufficiently raised rates out of concern that higher rates will discourage farmers from buying crop insurance. For example, in 1994 the crop insurance program manager testified that USDA did not want to cause "sticker shock" and drive away the farmers who are buying crop

insurance.[3] He said that USDA was "trying to raise rates in a relatively gentle way—10 percent instead of 20 percent a year—to phase them in." Similarly, USDA's blueprint stated that increasing the rates to the levels suggested by experience in the most recent 20 years may not be good public policy and "extremely high premium rates will preclude realization of the social benefits and public policy goals of the program because participation will be discouraged."

We recognize that rate increases could cause some farmers to limit their insurance coverage to the free catastrophic insurance program because they conclude that the additional insurance program is not to their financial advantage. However, as long as USDA sets rates that are less than 91 percent adequate, it will not have the premium income necessary to ensure that it meets the legislative requirement of $1 in premiums for each $1.10 in claims paid. Furthermore, USDA does not routinely evaluate and report on the adequacy of its rates. As a result, USDA does not calculate the expected shortfall between the income from premiums and the claims paid.

Rates for Some Levels of Coverage and Production Are Not Adequate to Meet Legislative Requirement

While establishing appropriate basic rates is critical to the financial condition of the crop insurance program, the majority of all insurance is purchased at rates for coverage and production levels that are above or below those covered under the basic rates. For this insurance, our analysis showed that in relationship to the basic rates, the rates are

- too high for coverage at the 75-percent level and too low at the 50-percent level,
- too low at the higher levels of production, and
- either too high or too low for the lower levels of production, depending on the crop.

As a result, the rates for both coverage and production levels are not aligned with risk. This occurs because USDA does not periodically review and update the calculations it uses to adjust rates above and below the basic rate.

[3]Testimony before the Subcommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, House Committee on Appropriations, Mar. 17, 1994.

Rates Charged for Different Levels of Coverage Are Not Aligned With Risk

To set the rates for the 75-percent and 50-percent coverage levels, USDA applies preestablished mathematical factors to the basic rate.[4] However, these factors have not resulted in rates that are aligned with risk. According to our analysis, the rates were too high at the 75-percent coverage level and too low at the 50-percent coverage level in relationship to the basic rates.[5]

For crops insured at the 75-percent coverage level, USDA set premium rates ranging from 19 to 27 percent more than required. (See table 2.3.) As a result, the 1994 income from premiums was about $30 million more than required for this coverage. Although grain sorghum had the greatest percentage of rates in excess of those required, corn had the greatest amount of additional premium income because the program was much larger.

Table 2.3: Amount That Premiums Were Greater Than Needed for Crop Year 1994 for 75-Percent Coverage Level

Dollars in millions

Crop	Percentage that premium rates were greater than required relative to basic rates	Total premiums for 75-percent coverage level	Amount that premiums were greater than required
Grain sorghum	27	$1.8	$0.5
Cotton	27	3.3	0.9
Barley	26	3.2	0.9
Wheat	25	29.1	7.2
Soybeans	21	33.3	6.9
Corn	19	75.5	14.1
Total	**21**	**$146.4**	**$30.3**

Note: Totals do not add because of rounding.

Source: GAO's analysis of USDA's data.

For crops insured at the 50-percent coverage level, the rates were about 11 percent too low, resulting in a shortfall in premium income of about $3 million for crop year 1994. The impact was much less than at the 75-percent coverage level because only about $30 million in insurance was sold at the 50-percent coverage level. However, the potential impact of

[4]USDA multiplies the basic rate at the 65-percent coverage level by 154 percent to arrive at the rate for 75-percent coverage and by 72 percent to arrive at the rate for 50-percent coverage.

[5]If the factors USDA applies to the basic rate to calculate the rates at the 75- and 50-percent coverage levels are correct, the loss ratios for each coverage level should be about the same over a number of years.

setting rates too low for the 50-percent coverage level is much greater for future years. Beginning in crop year 1995, USDA provided free catastrophic insurance to farmers at the 50-percent coverage level. In its fiscal year 1996 budget request, USDA estimated that it will need $350 million to cover its costs to pay these premiums for all crops. Assuming the six crops we reviewed represent about 75 percent of the free insurance provided—the proportion of the program they have historically represented—then about $263 million of USDA's estimate is for these crops. Since the 50-percent coverage rate is 11 percent too low, USDA's budget request could be understated by about $29 million.

Rates Charged for Different Levels of Production Are Not Aligned With Risk

USDA also adjusts the basic rates for production, set at the county average, for farmers whose historical production level is above or below the county's average. As with the varying rates for coverage, however, these adjustments do not result in rates that accurately reflect the risk involved at each production level. Specifically, according to our analysis the rates are too low for all crops at the higher production levels and too high for some crops at the lower production levels. The net effect is that premium income is too low. The greatest dollar shortfall resulting from these problems occurred in the cotton and corn programs.

USDA's basic rate applies to the farmer whose average production is about equal to the average for all producers in the county. However, many farmers' average production is above or below the county's average, and USDA's research shows that the higher a farmer's production level, the lower the chance of a loss. Therefore, USDA establishes rates for different production levels using a mathematical model that sets rates according to preestablished relationships between production levels. The rates per $100 of insurance coverage decrease as a farmer's average production increases.

The mathematical model USDA applies to the basic rate to calculate rates for production levels higher and lower than the coverage under the basic rate does not result in correct rates. For above-average production, USDA's rates should have been from 13 to 33 percent higher than currently set. As shown in table 2.4, USDA needed an additional $55 million in premium income in 1994 for the six crops. Although barley would have required the greatest percentage increase in premiums, cotton required the greatest amount of additional premiums because the cotton program is much larger.

Table 2.4: Additional Premiums Required for Crop Year 1994 for Production Levels Above Basic Rate

Dollars in millions

Crop	Percentage that premium rates were too low in relation to the basic rates	Total premiums for production levels above the basic rate	Additional premiums needed
Cotton	25	$78.9	$19.7
Corn	13	99.9	12.5
Wheat	17	64.2	11.0
Soybeans	21	43.0	9.1
Barley	33	5.6	1.9
Grain sorghum	18	6.3	1.1
Total	19	$298.0	$55.4

Note: Totals do not add because of rounding.

Source: GAO's analysis of USDA's data.

At below-average production, premiums were about evenly split for 1994 between crops with rates higher or lower than needed. Overall, as shown in table 2.5, the premiums were only slightly too low for this group.

Table 2.5: Additional Premiums Required for Crop Year 1994 for Production Levels Below Basic Rate

Dollars in millions

Crop	Percentage that rates were too low or too high (-) relative to basic rates	Total premiums for production levels below basic rate	Additional premiums needed
Corn	10	$91.6	$9.5
Soybeans	5	41.5	2.2
Grain sorghum	10	11.0	1.1
Barley	–14	5.0	–0.7
Cotton	–10	36.6	–3.5
Wheat	–11	53.7	–5.7
Total	1.2	$239.3	$3.0

Note: Totals do not add because of rounding.

Source: GAO's analysis of USDA's data.

As our analysis shows, the inaccurate rates had the greatest impact on income from premiums for cotton (a net shortfall of about $16 million)

and for corn (a net shortfall of about $22 million). For cotton, this shortfall occurred because farmers were allowed to insure their crop at production levels higher than their historical production levels, according to USDA officials.[6] As a result, a greater volume of insurance was sold at higher production levels than was warranted on the basis of the farmers' experience. Beginning in 1994, USDA changed the requirements for calculating farmers' production levels so that the amount of production insured would be more closely aligned with the farmers' actual production history. According to USDA officials, this change should result in cotton farmers' purchasing insurance at reduced production levels. However, as with other types of crops, USDA does not require cotton farmers to decrease the amount of production coverage by more than 10 percent per year until their coverage coincides with their actual production experience.

For corn, the shortfall occurs because the rates for production above and below the basic rates were both too low, according to our analysis. This situation indicates that the mathematical model is not appropriate for corn.

USDA Does Not Periodically Review and Update Factors for Calculating Different Coverage and Production Rates

The misalignment of rates with risk occurs because USDA has not revised the factors it applies to the basic rate to arrive at different coverage and production levels. USDA officials told us that they had not had the time and resources to revise the factors since they were established in the 1980s. Moreover, USDA's senior actuary told us that they have not developed a plan for how often the factors ought to be evaluated and updated.

Nonetheless, these officials said they were working to improve their capability to set rates. USDA is changing its computer database to enable it to more easily evaluate the crop insurance program's past performance and set new rates. This effort is expected to be completed in time for setting the 1997 crop rates. In September 1994, the Department contracted with an actuarial consulting firm to evaluate its factors for adjusting basic rates to other coverage levels. In addition, in response to our analysis of rates for production levels, USDA's senior actuary said the Department will have the consulting firm evaluate the accuracy of its mathematical model and recommend any specific changes needed.

[6]Beginning in 1989, USDA allowed cotton farmers to insure at the highest production level resulting from three different calculation methodologies, including historic production. However, USDA officials told us that most farmers purchased insurance at production levels calculated by the other methodologies.

USDA's Expansion of Benefits Under Prevented Planting Provision Further Jeopardizes Meeting Legislative Requirement

While USDA is taking a number of actions to improve the crop insurance program's rate structure, it recently made a decision that will weaken the program's financial condition. For 1995, USDA increased the benefits provided under the prevented planting provision of the crop insurance program. This decision will increase the claims paid by at least $135 million for 1995, according to USDA's estimates.[7]

Under the prevented planting provision, included in crop insurance policies beginning in crop year 1994, farmers who could not plant crops because of adverse weather conditions could receive insurance payments at 50 percent of the insurance coverage level they purchased.[8] In June 1995, USDA expanded the coverage to 75 percent, for crop year 1995 only.[9] In addition, for 1995 farmers who could not plant the crop they insured but were able to plant a different crop will receive 25 percent of their coverage level in insurance payments, whereas in the past, they would not have received any insurance payments.[10]

USDA increased the coverage level even though the 1995 crop insurance rates were not set to include this additional coverage. USDA officials recognized that this decision would hurt the program's financial condition. Specifically, USDA's decision memorandum states that the decision

". . . could arguably be seen as stretching the statute's requirement that Federal Crop Insurance Corporation . . . cannot make changes which adversely impact actuarial soundness and must achieve a loss ratio of 1.10 by October 1, 1995."

In advising on this decision, USDA's Office of General Counsel said that in determining rates and coverages, the manager of the program "should make the specific determination that the action will not adversely affect the 'actuarial soundness' of the program."

Despite this advice, the decision memorandum recommended the change, while recognizing its increased cost to the program. USDA's Acting Deputy Administrator for Risk Management said that USDA's decision was based on

[7]This decision is described in a June 16, 1995, decision memorandum for the Secretary of Agriculture. An attachment to the decision memorandum estimates that this decision will result in additional claims payments of $157.5 million. A more recent USDA estimate for the two crops most affected (corn and wheat) estimates additional claims of $135 million after deducting claims payments that would be avoided.

[8]For hybrid seed corn, cotton, and rice, the percentage is 40, 35, and 35, respectively.

[9]For hybrid seed corn, cotton, and rice, the percentage is 60, 52.5 and 52.5, respectively.

[10]For hybrid seed corn, cotton, and rice, the percentage is 20, 17.5, and 17.5, respectively.

broader policy concerns that had to be considered along with actuarial concerns. As crop year 1995 progressed, many farmers were prevented from planting the crop they had insured and were uncertain about the benefits. USDA believes that farmers were confused about the program's requirements and restrictions because of the rapid expansion of the crop insurance program in crop year 1995. Moreover, in offering prevented planting coverage for the first time in crop year 1994, USDA recognized that changes would be required in future years as it gained experience with this provision. Also, USDA concluded that it needed to correct an inconsistency in its coverage that resulted in three different levels of claims payments for farmers similarly affected by excessive moisture.[11] USDA was concerned that if changes were postponed, farmers might not accept the new crop insurance program and might call upon the Congress to revise it. Therefore, USDA concluded that changes to the prevented planting program were needed immediately.

According to the decision memorandum, the increased claims payments were to be recovered beginning in crop year 1996. However, according to USDA's Office of General Counsel, the governing legislation does not permit USDA to set premium rates to recover past losses. Instead, USDA can set rates only to cover anticipated future claims payments. Therefore, USDA intends to include the $135 million in claims payments in the historical database that it uses to calculate future premium rates to cover estimated future claims payments.

Conclusions

USDA has taken steps to improve the overall financial condition of the crop insurance program for the six crops we reviewed by raising the program's basic premium rates. On average, the basic rates are approaching the 91-percent adequacy requirement the Congress set for the program. However, this overall improvement masks some serious problems in the basic rates set for some crops and in some states.

USDA recognizes the need to raise the basic rates, and it plans to review its weighting methodology to ensure that the basic rates are accurate. At the same time, because of concerns that farmers would stop purchasing crop insurance, USDA has failed to raise the basic rates promptly to ensure achievement of 91-percent adequacy. Keeping farmers in the program is a

[11]Specifically, farmers who planted an insured crop that failed were eligible for claims payments coverage; farmers who were prevented from planting an insured crop and did not plant a subsequent crop were eligible for claims payments; but farmers who were prevented from planting an insured crop and planted a substitute crop were not eligible for any claims payments. USDA believed that this third group should receive some amount of claims payments.

legitimate goal. However, without sufficient increases in the basic rates, the legislative requirement cannot be met. Currently, USDA's management and the Congress cannot project the program's losses because USDA does not annually evaluate and report on the adequacy of the basic rates. Until that is done, USDA and the Congress will be unable to routinely know whether the program is meeting its legislative requirement, and, if not, what adjustments need to be made to the basic rates.

In addition to the problems with the basic rates, USDA has not adjusted the factors applied to the basic rates to arrive at accurate rates for coverage and production levels different from those covered by the basic rates. Most purchases of crop insurance occur at these other levels. This lack of accurate rates benefits some farmers and penalizes others: Farmers pay too much for coverage at the higher coverage level and too little at the lower coverage level. Similarly, farmers pay too little for production levels above average and too much or too little for production levels below average, depending on the crop. Ultimately, the crop insurance program loses money. USDA has recognized that these rates will continue to be incorrect because the mathematical factors it uses to set them are incorrect. USDA officials stated that they have not had the time and resources to periodically evaluate these factors. In response to our analysis, USDA officials are evaluating the mathematical factors to determine what changes are needed. However, these officials are not developing a plan to periodically reevaluate whether these factors continue to result in correct rates.

Finally, the difficulty in achieving the legislative requirement has been compounded by USDA's recent program policy decision to increase the coverage for prevented planting, even though USDA's Office of General Counsel advised against it. This decision added an estimated $135 million in claims payments that were not and cannot be recovered through premium rates because the governing legislation prohibits it. The prohibition raises further doubts about whether USDA's decision to increase prevented planting levels was appropriate.

Matter for Consideration by the Congress

If the Congress wants to ensure the financial viability of the crop insurance program, it may wish to prevent USDA from making program policy decisions that are not funded under the crop insurance program's rate structure. To do so, the Congress would need to amend the Federal Crop Insurance Reform Act of 1994 to specifically prohibit the Secretary of

Agriculture from making policy decisions that increase benefits without first increasing the rates to cover the anticipated claims.

Recommendations to the Secretary of Agriculture

To meet the 1994 legislative requirement that USDA reduce losses and set premiums to cover 91 percent of the claims paid, we recommend that the Secretary of Agriculture direct the Deputy Administrator for Risk Management to take the following actions:

- Annually raise premium rates up to the 20 percent authorized by the Congress, if needed, to cover future claims under the legislative requirement of 91-percent adequacy. As part of this rate-setting process, the Deputy Administrator should report the expected adequacy of premium rates each year, by crop and by state, so that USDA's management and the Congress can be kept informed of the program's financial condition. If the rates are not raised as required, USDA should include in its annual report the estimated cost of subsidizing farmers' purchase of crop insurance in areas where the rates are inadequate.
- Develop and implement a plan for periodically evaluating the mathematical factors used to set coverage and production levels above and below the basic rates to ensure that these factors continue to result in correct rates.

Agency Comments and Our Evaluation

USDA made a number of comments on our findings and conclusions. Overall, USDA agrees with our conclusion that the basic premium rates for the 1995 crop year are 89 percent adequate. However, USDA believes the program's financial soundness has been improved even more than these rates suggest when the other changes, such as increasing the premiums of high-risk farmers and improving the calculation of farmers' insured production levels, are taken into account. In addition, USDA noted that our analysis does not reflect the likely influence of the rates for crop year 1996 on rate adequacy. USDA believes its policy of gradual increases, coupled with the slightly lower rates indicated for 1996 by the 20 years of experience used to set them, should bring the 1996 rates closer to the level required.[12] USDA believes that its actions, in combination, should bring the 1996 crop insurance rates closer to 91-percent adequacy.

[12]This difference occurs because the experience for crop year 1994—a year with very low claims payments—enters the 20-year database used to set rates and the experience for crop year 1974—a year with higher relative claims payments—is dropped. This was true for each of the six crops we reviewed except wheat.

We recognize that some of the changes to the crop insurance program discussed in this report are improving the program's financial condition. We also recognize that the estimated savings from these changes, as well as the excess premiums for the 75-percent coverage level, may come close to offsetting the shortfalls in premiums that we have identified.[13] However, when the $135 million shortfall resulting from the prevented planting decision is included, the net shortfall for the program as a whole is substantial.

In addition, we cannot determine the extent to which the 1996 premium rates will further improve the program's financial soundness because they are still being developed. However, in response to USDA's point that the required 1996 premium rates will be more adequate because of the change in the rolling 20-year database on which the rates are based, we estimate that this change could raise the adequacy of the rates. This assumes that the 1996 rates would, on average, be at least as high as the 1995 rates. However, we estimate that the rates could still be less than adequate for some crops unless the rates are increased. For example, we estimate that the rate for corn would be 87 percent adequate without a rate increase, while the rate for wheat would be 85 percent adequate.

USDA recognized that its decision to increase prevented planting coverage for crop year 1995 added to the program's overall exposure without a matching adjustment to 1995 premium rates, as our report states. However, USDA said the report should recognize that its decision was based on broad policy concerns that farmers were suffering. We recognize USDA's position, but we still believe that decisions with this magnitude of impact on the program's financial soundness should be made with congressional consultation.

USDA disagreed with our recommendation that it raise rates by up to the 20 percent authorized by legislation when needed but agreed with our recommendation that an annual report showing the expected adequacy of premium rates each year by crop and state was feasible. It did not, however, clearly state whether it would prepare such a report. With respect to our recommendation that rates be raised by 20 percent, USDA repeated its position, which we noted earlier, that raising rates up to the maximum authorized should not be a standard practice because abrupt increases may discourage farmers from purchasing crop insurance. While we also recognize this possibility, as we previously stated, unless rates are

[13]In this analysis, we did not consider the savings from USDA's program for high-risk farmers because the claims payment experience of these farmers has been removed from the database for setting rates for the crop insurance program.

raised as much as allowed when needed, the premium rates for many crop programs will continue to fall short of the legislative requirement of 91-percent adequacy.

USDA also had several comments on a proposed recommendation in a draft of our report that it report to the Congress as a part of its budget request on the additional funds the program would need to subsidize farmers' purchase of crop insurance when the rates are inadequate. USDA questions whether this requirement should be a part of the budget process because of the overlap in the preparation of crop-year rates and fiscal year budget requests. Instead, USDA believes that such information could appropriately be included in an annual report to the Congress. We believe USDA's view has merit and have revised our recommendation accordingly.

USDA Is Taking Action to Identify High-Risk Farmers

Beyond establishing a sound overall structure for premium rates, aligning these rates with risk requires USDA to charge higher rates to the individual farmers who present the highest insurance risk. To accomplish this, USDA has instituted a program to identify those farmers with frequent and substantial claims so that it can increase their premiums and/or reduce the production levels they can insure.[1] Without this program, the overall rates would have to be raised more, thereby penalizing lower-risk farmers. This in turn would make lower-risk farmers less likely to purchase crop insurance and contribute to reducing the program's financial stability. USDA's program for targeting high-risk farmers for rate increases is generally sound and will reduce the government's outlays for crop insurance, although not by as much as USDA estimated.

USDA's Actions to Identify High-Risk Farmers

The Department implemented the high-risk program in 1991 to reduce the high losses associated with some farmers in the crop insurance program. Over the period 1981 through 1989, USDA had found that about 6 percent of the policies accounted for about 28 percent of the total claims paid. The high-risk program improves the crop insurance program's financial soundness by (1) reducing the production levels at which high-risk farmers are insured and/or (2) charging high-risk farmers increased rates that are more in line with their claims history.

To be placed in this high-risk program, a farmer must

- have received claims payments in at least 3 years, or if information on more than 5 years' experience is available, in 60 percent of the years;
- have had a cumulative adjusted loss ratio of about 4.0 or more (i.e., $4 or more in claims paid for each $1 in premiums);[2] and
- require a rate increase of at least 10 percent from the previous year.

USDA has expanded the high-risk program from one crop in 1991—soybeans—to 37 crops in 1995. By 1993, the program included 11 crops that accounted for about 90 percent of the crop insurance purchased.

[1]USDA refers to the high-risk program as the Nonstandard Classification System.

[2]The actual loss ratio varies depending on the premium rate paid. USDA calculates an adjusted loss ratio (identified as a "z" score) by using an actuarial formula that considers both the loss ratio and the premium rate charged. The higher the loss ratio and premium rate, the higher the adjusted loss ratio and the more likely that a farmer will be included in this high-risk program. For crop year 1995, USDA reduced the adjusted loss ratio for some crops in order to maintain a specified percentage of farmers in the high-risk program for each crop.

In addition, in response to its 1994 appropriations legislation, USDA developed a modified high-risk program for counties where losses were high. These were counties that had paid out more than $1.10 in claims for each $1 in premiums in 70 percent of the years (1980-92) in which the crop program was offered.[3] To be placed in this program, a farmer in these counties must

- have received claims payments in at least 3 years, or if information on more than 5 years' experience is available, in 60 percent of the years;
- have had a cumulative adjusted loss ratio of about 2.25 or more (i.e., $2.25 or more in claims payments for each $1 in premiums); and
- require a rate at least 10 percent higher than would have otherwise been charged.

High-Risk Program Will Produce Savings, Although Not as Much as Anticipated

USDA's plan for targeting high-risk farmers will reduce the government's outlays for the crop insurance program, although not by as much as the Department had originally estimated. According to USDA's blueprint, the high-risk program will reduce crop insurance claims from an average of $1.40 in claims for every $1 in premiums to an average of between $1.30 and $1.35. USDA estimated that the program would result in savings of about $70 million for crop year 1993. However, we estimated savings from the program of about $33 million for 1993.

Our estimate is lower because we based it on the actual program USDA implemented in 1992 and 1993, which did not include as many farmers as the Department's estimate assumed. This estimate was based on USDA's original plan to select 2 percent of the policyholders. In practice, however, after changing its targeting criteria in 1992 and 1993, USDA selected only 1.5 percent. Furthermore, over one-third of those identified had already ceased buying crop insurance before being selected for the program. Therefore, about 1 percent of all policyholders were included in the program. (App. IV contains a more detailed discussion of our calculations and methodology.)

Additional savings may not be significant after the first year that farmers are included in the high-risk program. Most of the savings are realized in the first year, when many high-risk farmers choose to stop purchasing crop insurance rather than pay the higher rates. For those who remain, most of the rate increases occur in the first year; the rate increases in

[3]For this analysis, USDA adjusted the historical premiums to the 1993 premium rates, as the legislation required.

succeeding years are similar to those for other farmers. For example, for farmers who remained in the program after being targeted in 1992, the premiums paid averaged 67 percent more in 1992 than in 1991 and 7 percent more in 1993 than in 1992.

Changes to Establish Accurate Production Levels Are Undermined by Lack of Verification of Farmers' Production History

To ensure that the crop insurance program realizes the congressional requirement of receiving a projected $1 in premiums for each $1.10 in claims paid, USDA needs reasonable estimates of farmers' normal production. This information will help ensure that farmers do not purchase insurance for production levels higher than they are likely to produce and, as a result, make claims for production losses that are not real. To achieve this objective, USDA has recently changed the way it establishes farmers' production levels to more closely align them with actual production history. USDA's action should reduce the government's outlays, although not as much as USDA had anticipated. However, this change has a critical weakness. USDA does not require that loss adjusters verify the accuracy of the production history supplied by the farmers and therefore lacks assurance that it is insuring production at the appropriate level.

Planned Actions to Determine Farmers' Normal Production Levels

According to USDA's blueprint, the level of production insured may be the single most important factor in determining the success or failure of the crop insurance program. The insured production level is key because it forms the basis for calculating insurance premiums and payments on claims. Consequently, a production level that is too high compared with the productive potential of the farmer and the land will increase the frequency and amount of a farmer's claim. Conversely, a production level that is too low will not effectively protect farmers from loss and, because the production level is regarded as insufficient, will discourage farmers from buying insurance.

Before crop year 1994, farmers could base the level of production for which they purchased crop insurance on 10 years' actual production, or, for those years for which farmers did not report actual production, on a modified average production level for the county. USDA concluded that the option of basing a production level on a modified county average was adversely affecting the crop insurance program's financial condition. This option benefited farmers whose production was below the modified county average. It enabled them to get a higher level of production coverage than their historic production levels would have warranted. Therefore, some farmers may have paid lower premiums than they should have and received claims that exceeded what would have been warranted by their historic production levels.

To address this problem, in crop year 1994 USDA began penalizing farmers who did not have at least 3 years of production history. The revised rules

should discourage farmers from using the modified average production level for the county and encourage them to provide their actual production history. Under the revised rules, USDA uses

- 65 percent of the modified average production level for the county for 4 years if the farmer reports no actual production,
- 80 percent of the modified average production level for the county for 3 years if the farmer reports actual production for 1 year,
- 90 percent of the modified average production level for the county for 2 years if the farmer reports actual production for 2 years, and
- 100 percent of the modified average production level for the county for 1 year if the farmer reports actual production for 3 years.

After the first 4 years, the level of production that can be insured is the simple average of the actual production reported for up to 10 years.

New Method for Setting Production Levels Will Produce Savings, Although Not as Much as Anticipated

The actions USDA has taken to revise production levels will reduce the government's outlays, but not by as much as it estimated. USDA estimated in its blueprint that its actions would reduce crop insurance claims over time from $1.40 for every $1 in premiums to between $1.25 and $1.30. This estimate equates to a savings of between $75 million and $113 million annually.

However, we estimated that these savings would be about $44 million for crop year 1994. Our estimate differs from USDA's primarily because USDA limited any reduction in a farmer's insured production level to no more than 10 percent annually. In addition, with the change in the calculation of production levels, farmers with 4 to 8 years of production history had increases in their production levels. (App. V contains a detailed discussion of our methodology for calculating the savings.)

USDA Is Not Requiring Loss Adjusters to Verify Production History Supplied by Farmers

Although USDA recognizes the importance of accurate production levels to the program's integrity, it does not require that loss adjusters verify the production history provided by farmers. Therefore, USDA cannot be assured that it is paying claims accurately.

USDA allows farmers to certify the production level that they insure. It also requires farmers to retain records supporting their certified production level for 3 years. However, USDA does not require insurance adjusters to verify the accuracy of the production levels supplied by farmers.

Over the years, we and USDA's Office of Inspector General have consistently found that USDA's process for verifying production histories has been inadequate. In 1988, we reported that USDA did not have adequate procedures to ensure that farmers' reported production levels were accurate.[1] According to our analysis of USDA's data, 37 percent of the production levels examined were inaccurate, largely because of inaccurate certifications by farmers. Therefore, we recommended that for each claim, USDA require loss adjusters to verify the production data supporting the production level insured. We noted that such verifications could be minimized by spot-checking the supporting data for a farmer's production level for some, rather than all, years. Likewise, in 1989 USDA's Inspector General found inaccurately reported production levels in about half of the cases reviewed and recommended that USDA require review of the production levels for each claim until an acceptable error rate is achieved.[2] Despite these recommendations, USDA has not established an acceptable error rate and is not requiring verification.

Conclusions

USDA's changes in the way it calculates farmers' production levels should improve the program's financial condition because the revised methodology will result in more accurate estimates of a farmer's expected production. However, USDA will not get the full short-term benefit it anticipated from the change because it limited the reduction in a farmer's insured production level to no more than 10 percent annually. Therefore, farmers can continue for some time to insure at production levels higher than their experience justifies. Moreover, a long-standing problem that could erode the positive benefit of more accurate production levels is the fact that USDA does not require verification of production when claims are adjusted. We believe this problem needs to be addressed.

Recommendations

We recommend that the Secretary of Agriculture direct the Deputy Administrator for Risk Management to take the following actions:

- Remove the 10-percent annual limit on reduction in farmers' insured production levels so that the level of production insured is aligned with the farmers' actual production history. If not, USDA should include in an

[1]Crop Insurance: FCIC Should Strengthen Actual Production History Program Controls (GAO/RCED-89-19, Dec. 15, 1988).

[2]Federal Crop Insurance Corporation—Crop Year 1988 Insurance Contracts With Claims, USDA Office of Inspector General, Audit Report No. 05600-1-Te (Sept. 1989).

annual report to the Congress the estimated cost of subsidizing the additional losses that will be incurred.

- Require that the production history provided by farmers be verified when claims are adjusted.

Agency Comments and Our Evaluation

In commenting on our recommendation concerning the 10-percent limit in farmers' insured production levels, USDA recognizes that there is a cost associated with its policy of limiting reductions in insured yields. However, USDA believes that this policy provides a more "gentle landing" for farmers than would occur in instances in which farmers have recently suffered severe losses. USDA also agreed that reporting on the impact of this policy on the estimated cost of subsidizing additional losses in an annual report to the Congress is workable.

Concerning our recommendation aimed at improving the verification of production history, USDA agrees that it needs to look at ways to better ensure that it is obtaining an adequate number of verifications. However, USDA believes that it needs time to identify the most appropriate point in the process for such verification. USDA plans to consult with the companies with which it has insurance contracts and arrive at a workable verification plan by May 31, 1996.

USDA Has Reduced the Risk in the Timing of Insurance Sales, but Some Additional Changes Are Needed

Until recently, USDA allowed farmers to purchase crop insurance after they knew whether early growing conditions, such as the amount of moisture in the subsoil, might result in poor production. Such late deadlines for purchasing insurance increased the likelihood that those who bought insurance during the planting period would file claims. In recognition of the importance of purchasing deadlines to the crop insurance program's financial soundness, 1994 crop insurance legislation required USDA to set deadlines that were 30 days earlier than in 1994.[1] This was to prevent farmers from buying crop insurance close to or in the planting period, when they can better evaluate the probability of a loss. While the revised deadlines will reduce the extent of this problem, the underlying problem of USDA's approach to setting these deadlines remains.

The legislation builds on the proposal USDA included in its blueprint for setting the last date for purchasing insurance for the 1995 crop year 15 to 30 days earlier than it had in 1994. USDA's proposal was in response to our analysis of three crops in 111 crop-producing areas.[2] For 33 percent of these areas, USDA allowed insurance sales to continue well into the planting period (8 to 60 days past the initial planting date). In another 32 percent of these areas, the deadlines for purchasing insurance were near the start of the planting period (up to 7 days before or after USDA's initial planting date).

Although USDA moved the deadline for new purchases of crop insurance 30 days earlier in the year, it generally did not move the related deadline for cancelling insurance. The cancellation deadline is the last date that current insurance purchasers may cancel their coverage before it continues in force for another year. Before crop year 1995, the purchasing and cancellation deadlines were on the same date, as would be expected. By not moving the cancellation deadline, USDA allows many current purchasers to make the decision to renew or cancel their crop insurance coverage well into the planting period. USDA officials explained that they could not change the cancellation date without first publishing the proposed change for comment in the Federal Register. USDA officials said that they were in the process of making this change and expect to have revised all cancellation dates by crop year 1997.

[1]The Federal Crop Insurance Reform Act of 1994 (P.L. 103-354, Oct. 13, 1994, title I).

[2]For this analysis, we compared USDA's deadlines for purchasing crop insurance and initial planting dates for corn, grain sorghum, and soybeans in 1992. For example, in Nebraska USDA had one deadline for insuring corn (April 15) but two planting areas with different initial planting dates (April 6 for one part of the state and April 25 for the other).

While USDA had set its purchasing deadlines 30 days earlier in the year as the legislation required, it has not addressed the underlying problem—these deadlines are not designed to address actual production situations. Instead, the dates have historically been set, and continue to be set, to ease the administration of the crop insurance program. The dates are set for a several-state area rather than for local growing conditions. Specifically, USDA has two principal purchasing deadlines for spring-planted crops and two for fall-planted crops. These deadlines have historically fallen into the planting period for many crops in many areas. However, USDA does not have written procedures or criteria for its field offices to follow in reviewing and updating the purchasing deadlines on the basis of the planting dates in each crop-growing region.

Consequently, the revised national deadlines correct the situation we identified in most cases, but not all. With this change, 12 percent of the areas we reviewed—compared with 66 percent formerly—had purchasing deadlines that continued into the planting period. Without establishing a procedure for routinely reviewing and updating these deadlines on the basis of planting practices in each region, USDA will continue to have some deadlines that extend into the planting period.

Moreover, USDA does not record crop insurance sales dates in its database. Therefore, it cannot evaluate the relationship between the claims paid and the number of days before the planting period that the insurance was purchased.

Conclusions

USDA has improved the financial condition of the crop insurance program by moving purchasing deadlines 30 days earlier in the year. However, by not routinely setting these deadlines by crop-growing regions, USDA enables some farmers to better evaluate growing conditions and increases the likelihood that they will purchase crop insurance when growing conditions are poor. As result, USDA increases the probability of a shortfall—that claims paid will exceed $1.10 for each $1 in premiums. Furthermore, by not recording purchase dates in its database, USDA cannot adequately evaluate the relationship between the claims paid and the number of days before the planting period that insurance was purchased.

Recommendations

We recommend that the Secretary of Agriculture direct the Deputy Administrator for Risk Management to

- set purchasing deadlines before the initial planting date in all areas of the country and establish criteria and procedures for routinely reviewing these deadlines to ensure that they continue to occur before initial planting dates and
- record the date that insurance is purchased in order to better evaluate the relationship between purchasing deadlines and claims payments.

Agency Comments and Our Evaluation

USDA agrees with our recommendation that USDA set purchasing deadlines before the initial planting date in all areas of the country and establish criteria and procedures for routinely reviewing these deadlines to ensure that they continue to occur before the initial planting dates. USDA noted that the legislative requirement to move all purchase deadlines 30 days earlier for crop year 1995 resulted in some purchase deadlines being too early and inconsistent.

USDA's Rate-Setting Methodology

Annually, analysts in the U.S. Department of Agriculture's (USDA) crop insurance field office in Kansas City, Missouri, follow a multistep process, which is partially automated, to establish the premium rates for each of the 51 crops in the federal crop insurance program.

For each crop, USDA analysts begin by extracting data on counties' crop experience for all years available (up to 20) from the mainframe computer. The data elements for each crop, crop year, and county include (1) the dollar amount of the insurance coverage sold (also referred to as insurance in force),[1] (2) the dollar amount of the claims paid,[2] and (3) the average coverage level.

The analysts remove from the resulting database information on historical insurance in force and claims payments to farmers who incur frequent and severe losses relative to other farmers. The premium rates for these individuals are established separately under the high-risk program. The analysts remove these data to avoid setting rates that are higher than necessary for the risk represented by the farmers who are not considered high-risk.

The analysts then adjust the historical data to the 65-percent coverage level, the level at which USDA sets its basic premium rate.

Using the adjusted data, the analysts compute a loss-cost ratio for each crop in each county. They calculate this ratio by dividing the total claims payments by the total insurance in force; the result is stated as a percentage. For example, if the claims paid in one year totaled $7.36 and the insurance in force was $100, the loss-cost ratio is 7.36 percent. The percentage is the rate that USDA would need to charge per $100 of insurance coverage sold if the total premiums are to equal the total claims payments over a number of years. For example, 7.36 percent would indicate that a rate of $7.36 is required per $100 insurance coverage sold. In calculating loss-cost ratios, USDA uses the latest data available, which are for the period ending 2 years before the year for which the rates are being established. For example, USDA established crop year 1995 rates in 1994; the most recent 20-year period was for crop years 1974 through 1993.

The analysts determine a preliminary rate—called the county unloaded rate—by first calculating a loss-cost ratio for each of the 20 years. The analysts then divide the data into two segments—the 4 years with the

[1]USDA refers to the insurance coverage sold as liabilities.

[2]USDA refers to the claims paid as indemnities.

highest loss-cost ratios and the 16 years with the lowest loss-cost ratios. For the 4 years with the highest loss-cost ratios, they cap the ratios at the loss-cost ratio for the highest-loss year in the 16-year segment. Using the capped loss-cost ratios for each of the 4 years, the analysts calculate the average for all 20 years to establish the county unloaded rate.

The analysts adjust the county unloaded rates to minimize the difference between the rate for each county and that of its neighboring counties. To make this adjustment and "smooth" the rates from county to county, the analysts use a weighting process, called the concentric circle method.

USDA then develops a surcharge for catastrophic coverage for each crop in each state. This surcharge is added to the adjusted unloaded rate for each county in the state. The analysts pool, at the state level, the amount of insurance in force and the claims payments for the 4 years with the highest loss-cost ratios in each county that was not factored into the county unloaded rates. Using these data, they compute a statewide surcharge for catastrophic coverage (pooled claims payments divided by pooled insurance in force). USDA limits the surcharge to a maximum of 5 percentage points, or $5 per $100 in insurance coverage. Beginning in 1995, any excess above the 5 percent is factored back into the individual county's unloaded rate on the basis of the amount that the county contributed to the excess. The analysts then add the state catastrophic surcharge to each county's unloaded rate. This results in a basic rate for the county for the 65-percent coverage level and is also considered to be for the average production level in that county.

At this point, the analysts calculate a rate at the 65-percent coverage level for each farming practice, such as whether the insured acreage is irrigated or dryland, and for each crop type, such as winter wheat or spring wheat. Using historical data, the analysts periodically establish a factor for adjusting the basic rate for each crop in each county to align the rate with the risk associated with each farming practice and crop type. The analysts apply these factors to the basic rate to calculate a rate for each farming practice and crop type.

To facilitate review by regional service office underwriters, the analysts convert the rate from the 65-percent coverage level to the 75-percent coverage level. This conversion is made because the underwriters are more familiar with the 75-percent coverage level. The analysts make the conversion by multiplying the rate for each county-crop practice and type

by a previously established factor of 154 percent.[3] The field underwriters review these rates for reasonableness on the basis of their knowledge and continuing research on farmers' experiences with the particular crop in the county and the surrounding area; they recommend changes when they believe adjustments are warranted. On the basis of the recommendations, analysts in the Kansas City office make any adjustments.

Following this review and any resulting adjustments, the analysts adjust the rates upward for the risk represented when farmers choose to subdivide their farming operation for a given crop into multiple units for crop insurance purposes. They do this because USDA's historical data show that farming operations insured on a multiple unit basis are more likely to make claims than those insured as one unit. The analysts divide the basic rate by a factor of 0.9 (in effect, imposing a 10-percent surcharge) to arrive at the rate charged farmers who subdivide their land into units. If a farmer chooses to insure the entire farming operation for a crop as one unit, USDA then allows a 10-percent discount from the rate.

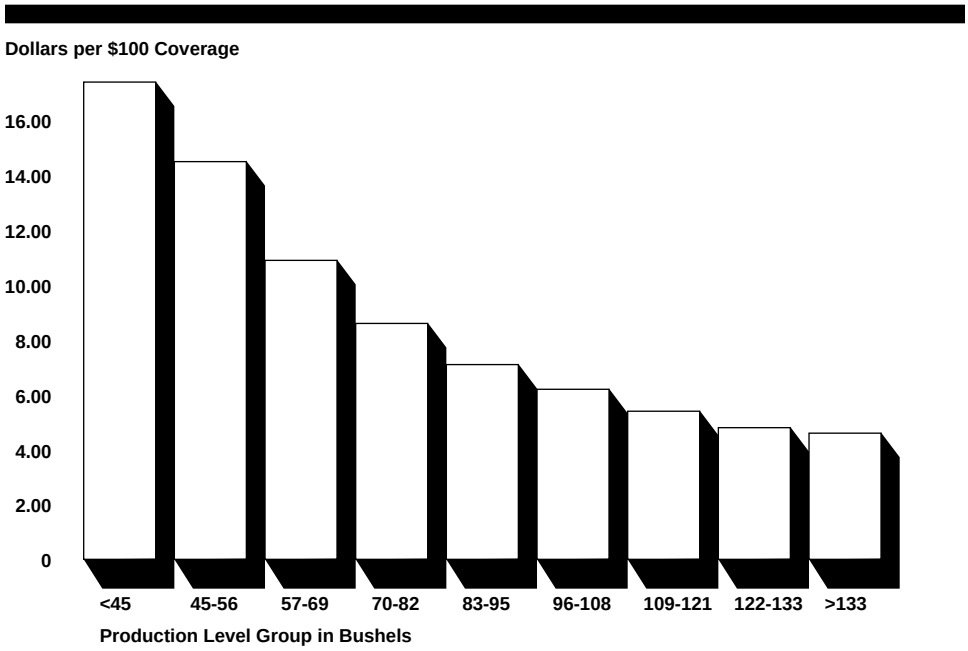
The rates for the 50-, 65- and 75-percent coverage levels that the analysts have calculated are for farmers whose historic production level, or yield, is about equal to the average for all producers in the county. However, many farmers' average production level is above or below the county's average. According to USDA, farmers' chances of having a loss decrease as production increases. Therefore, USDA has established a series of rates (9 for barley, corn, grain sorghum, soybeans, and wheat, and 13 for cotton) that decrease as production levels increase. USDA refers to these as rate spans; for most crops, it numbers them R01 through R09. To adjust the rate for the average production level—referred to as the midpoint rate (generally R05)—to the other production levels, the analysts apply a mathematical model to the R05 rate. The R06 through R09 spans are for producers whose production levels are higher than average. The model reduces the rates as production levels increase from the R06 to the R09 level. Conversely, the R01 through R04 spans are for farmers whose production is lower than average. The model increases the rates as the production level decreases, and the R01 span is charged the highest rate.

Figure I.1 shows the rates for corn in one county to illustrate the nonlinear relationship of the rates by production level. At the lowest production level for the county—less than 45 bushels per acre—the premium rate is $17.40 per $100 coverage; at the midpoint level—83 to 95 bushels per

[3]Later, the analysts adjust the rates back to the 65-percent coverage level. To calculate the rate for the 50-percent level, the analysts multiply the 65-percent coverage level by 72 percent.

acre—the rate is $7.10; and at the highest level—more than 133 bushels per acre—the rate is $4.60.

Figure I.1: Crop Insurance Rates for Production Level for Corn in One County, Crop Year 1995



Note: Rates are at the 65-percent coverage level.

Source: GAO's illustration is based on USDA's 1995 rates for dryland corn in Cooper County, Missouri.

To account for the government's subsidy, the analysts further adjust the rate table so that the rates exclude this subsidy. The analysts then examine the completed rates to ensure that none exceed the maximum increase of 20 percent per year allowed by law and make adjustments downward, where necessary.

As a final step, discounts are developed for farmers who buy hail and fire protection from private insurance companies. The analysts establish a maximum discount for each crop in each county on the basis of the prevailing costs of private insurance in the area. Farmers who buy hail and fire protection from another insurer are granted a discount from the USDA

rate that is equal to the amount they paid for the protection up to a preestablished maximum set by USDA.

Methodology for Evaluating Extent to Which USDA Set Crop Insurance Premium Rates at Required Levels

To estimate the extent to which USDA's premium rates for crop insurance were adequate to achieve an income of at least $1 in premiums for every $1.10 in claims paid to farmers, we examined the extent to which USDA's basic rates for crop years 1991 through 1995 achieved this requirement (referred to in this report as "adequacy"), measured the extent to which USDA had raised the premium rates each year since 1990, and examined the accuracy of the rates for different coverage and production levels. We based our analysis on six major crops that represent about 75 percent of USDA's crop insurance business: corn, wheat, soybeans, cotton, grain sorghum, and barley.

Methodology for Calculating Extent to Which USDA's Rates Were Adequate

To determine the adequacy of USDA's premium rates, we compared USDA's basic rates (set at the 65-percent coverage level and average, or midpoint, production level) for each crop and each year to a benchmark premium rate that we calculated. Generally, we followed USDA's methodology for setting the basic rates in developing our benchmark rates. Just as USDA does, we used the insurance experience for the most recent 20-year period available—at the time the rates were established—to calculate the benchmark rates for each year.

Although USDA sets premium rates for each crop at the county level, it uses the historical experience of both the county and state to do so. Therefore, to develop a benchmark rate that also considered county and state experience, we weighted experience and rates at the county crop level up to the state crop, national crop, and national level (all crops combined) for the six crops reviewed. We also calculated a benchmark rate, as suggested by a USDA consultant, that gives more weight to recent years' experience.

Once we calculated a benchmark rate at the state crop, national crop, and national level for each year, we calculated the extent to which USDA's rates were adequate (as a percentage), by dividing USDA's weighted average basic rate by our benchmark rate.

Benchmark Rates

To calculate benchmark rates for each crop for 1991-95, we obtained the computer files that USDA used to set insurance rates each year. These data—for crop years 1969-93 for each of the six crops we reviewed—included the dollar amount of premium income, claims paid, and dollar amount of insurance coverage sold (insurance in force). The data also included the average coverage level for each crop in each county (county crop program). We then made two adjustments to the data that

USDA also makes. We (1) removed from the database the experiences of the high-risk producers, which USDA handles under a separate program, and (2) used USDA's mathematical formula to adjust the claims paid and insurance in force to a uniform 65-percent coverage level. In addition, we removed records that had zero or missing values in all fields or a negative value in any field.

Following these adjustments to the database, we calculated benchmark rates for each crop in each county by taking a 20-year[1] simple average of the loss-cost ratios. The 20-year period used was the period for which USDA had complete data available when it set its premium rates each year. For example, the 1995 benchmark rates were based on the 1974-93 period. To obtain total benchmark premiums for a county, we multiplied the benchmark rate for that county and crop by the adjusted amount of insurance in force for that county and crop for the last year in the 20-year period.

We then summed the benchmark premiums and adjusted the amount of insurance in force by county crop program for each state and crop. To calculate an estimated benchmark premium rate by state crop program and crop year, we divided the total adjusted amount of insurance in force into the total benchmark premiums. We also summed the data to the national level and made an identical calculation to determine a benchmark premium rate for the crop for the nation and a national benchmark premium rate for the six crops combined.

Weighted Average Basic Rates

Recognizing that varying amounts of insurance coverage are sold in the many counties where insurance is offered and that the premium rates vary by county, we calculated a weighted average basic rate for each crop to allow each basic rate to have a weight corresponding to the amount of insurance sold at that rate. To make this calculation for each crop for each year, we obtained the amount of insurance in force and the published premium rates from USDA's database by county, farming practice, and crop type. Because USDA's published rates include a 10-percent charge for optional unit coverage, we adjusted the rates downward to eliminate the charge included for this coverage. We made this adjustment because USDA deducts the amount from the rate if an insured farmer does not elect this option.

[1]For counties with less than 20 years of experience, we used the number of years for which experience was documented.

To calculate USDA's weighted average basic rate at the state crop and national crop level, we made a series of calculations. First, for each county crop program and year, we multiplied the basic rates (at 65-percent coverage and midpoint of the production levels) for each farming practice and crop type by the amount of insurance in force for the same year and for each farming practice and crop type.[2] Second, we summed the premiums and the amount of insurance in force for each county crop program and each year and divided the total premiums by the insurance coverage to obtain a weighted average basic rate for the county and crop.[3] Third, we multiplied the weighted average rate for that county and crop for each year by the adjusted amount of insurance in force that we used to calculate the benchmark premium rates—the same information that USDA had available when it set the premium rates—to obtain the total premiums in the county that USDA could expect when it published its rate schedule. Fourth, we summed the total premiums in the county and total amount of insurance in force for each county crop program and year to the state crop and national crop level. Fifth, we divided the total premiums by the total insurance coverage in force for each crop and year to obtain a weighted average state crop rate, national crop rate, and national premium rate.

USDA Consultant's Suggested Weighting of Experience

We calculated an additional benchmark rate, following the same methodology used for the original benchmark rate, except we gave greater weight to experience in recent years. This approach was suggested by USDA's actuarial consulting firm, Milliman and Robertson, in a 1983 study. Following the consulting firm's suggestion, we assigned 50-percent weight to the data for the last 10 years and 50-percent weight to the data for the entire 20-year period.[4] In addition to the benchmark rate we had already computed, we computed a second rate averaging the loss-cost ratios for the most recent 10 years. We then averaged the two rates—that is, for 20 years and 10 years—to obtain a benchmark rate suggested by USDA's consultant.

[2]Although USDA sets rates annually with data on experience ending 2 years before the year for which the rates are set, we applied the rates to the same year's insurance in force because USDA changes its coding for some information from year to year. This makes it very difficult to match the rates for one year with the insurance in force in any previous years. For the six crops in 1995, USDA published about 25,300 rates at the 65-percent coverage and midpoint of the production levels.

[3]We multiplied 1995 rates by the 1994 insurance coverage in force because 1995 data was not complete at the time of our review. USDA representatives worked with us to identify the several coding changes necessary to match 1994 and 1995 data for this calculation.

[4]Although the consultant suggested that all years of historical data be used, following USDA's approach we used 20 years of historical data and did not determine the impact that using all available years of history would have had on USDA's premium rates.

Calculating Extent to Which USDA Increased Its Premium Rates

To determine the extent to which USDA raised the premium rates each year from 1991 to 1995, we calculated the average premium rates by state crop program for each year and then calculated the extent to which USDA raised or lowered these rates from one year to the next for the six crops reviewed. We calculated a weighted average premium rate to give each rate a weight corresponding to the amount of insurance sold at that rate. To do so, we extracted from USDA's database information on the total amount of insurance coverage in force by county crop program, farming practice, and crop type for crop years 1990 through 1994. We multiplied this amount by the premium rate for each farming practice and crop type to obtain the total premiums.[5] We summed these premiums and insurance in force amounts to the state crop program level and divided the total premiums by the total insurance in force. This provided a weighted average premium rate by state crop program and crop year.

Calculating Extent to Which Rates for Each Coverage and Production Level Were Correct

To determine the adequacy of USDA's premium rates for farmers purchasing insurance at coverage and production levels different from the basic rate (65-percent coverage and the midpoint of the production levels), we compared the relative loss experience of the different levels available over the period 1990 through 1994 to the loss experience at the basic rate. USDA sets the basic rate for each crop in each county and multiplies the basic rate by predetermined mathematical factors to arrive at the rate for 75-and 50-percent coverage levels and to arrive at rates for the several different production levels above and below the midpoint rate span. If the factors are correct, then the average loss ratios for each coverage and production level over a number of years should be about the same as that experienced at the basic rates, and the premiums will be accurate. Conversely, if the factors are incorrect, then the average loss ratios for different coverage and production levels will vary, and the premium rates will be incorrect.

Coverage Levels

To measure whether rates for coverage levels above and below the 65-percent coverage level were correct for each crop, we recalculated the premiums and claims paid at the 75-percent coverage level as if the insurance had been sold at the 65-percent level and recalculated the premiums and claims paid at the 65-percent coverage level as if the insurance had been sold at the 50-percent level. In addition, for each crop, we (1) calculated the loss ratios for each year for both the original coverage level and the recalculated coverage level, (2) averaged the loss

[5]We multiplied the 1995 premium rates by the 1994 insurance in force.

ratios for the 5 years for both the original coverage level and the recalculated coverage level, (3) calculated the percentage that the loss ratios at 75-percent coverage were more or less than at the recalculated 65-coverage, and (4) calculated the percentage that the loss ratios for the recalculated 50-percent coverage were more or less than at 65-percent coverage.

To calculate the amount by which the premiums were more or less than required, we multiplied the 1994 premiums for each crop and coverage level by the percentage that the average loss ratio (over the 5-year period) was higher or lower than the loss ratio for the 65-percent coverage level.

Production Levels

To measure whether the premium rates for production levels above and below the basic rates were correct for each crop, we (1) calculated the loss ratio for the basic rates, which are set at the county's average production, and the rates for production higher and lower than the basic rates for 1990 through 1994; (2) averaged the loss ratios for each of the three groups for the 5-year period; and (3) calculated the percentage by which the loss ratio for the production levels higher and lower than the basic rates differed from the loss ratios for the basic rates.

To calculate the amount by which premiums were more or less than required for these production levels, we multiplied the 1994 premiums for each crop by the percent that the average loss ratio (over the 5-year period) was higher or lower than the loss ratio for the basic rates.

Results of Analysis of Crop Insurance Premium Rates

Tables III.1 through III.6 present the results of our analysis of USDA's basic rates (i.e., at the 65-percent coverage level and average production level) for the six crops we reviewed. For each crop, state, and year (1991 through 1995), the table shows the

- weighted average premium rate (arrived at by weighting the county premium rates by the insurance coverage sold);
- extent to which the premium rate was adequate, expressed as a percentage; and
- amount of insurance coverage sold (insurance in force).[1]

[1]USDA refers to the insurance coverage sold as liabilities.

Table III.1: Weighted Average Premium Rate, Adequacy of Premium Rate, and Insurance in Force by State for Barley, Crop Years 1991-95

	1991			1992		
State	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Ariz.	$3.51	58	$0.02	[a]	[a]	$0
Calif.	12.89	39	1.90	$16.08	50	1.07
Colo.	7.30	90	0.94	8.15	91	1.05
Del.	2.97	339	0.03	3.42	380	0.02
Idaho	4.73	48	6.37	5.14	50	5.44
Ill.	5.31	31	0.01	5.56	73	0.01
Ind.	3.91	57	0.02	4.41	88	0.02
Iowa	6.75	952	0.01	7.64	1,594	0.01
Kans.	10.20	37	0.32	11.78	42	0.26
Ky.	4.68	21	0.06	5.49	27	0.03
Md.	3.51	[a]	0[b]	[a]	[a]	0
Mich.	5.87	37	0.15	7.09	61	0.12
Minn.	8.16	89	25.76	9.27	110	16.90
Mo.	7.39	152	0.03	8.60	157	0.03
Mont.	8.83	63	54.78	9.53	68	40.93
Nebr.	10.99	47	0.15	13.05	57	0.10
Nev.	[a]	[a]	0	9.27	10	0.01
N. Mex.	15.86	38	0.03	19.55	46	0.02
N.Y.	3.87	[a]	0[b]	4.41	48	0[b]
N.C.	4.60	25	0.02	5.24	75	0[b]
N. Dak.	8.26	84	122.39	9.16	95	85.31
Ohio	[a]	[a]	0	4.14	[a]	0[b]
Okla.	10.00	27	0.05	10.82	91	0.06
Oreg.	3.51	93	2.73	3.76	98	1.82
Pa.	3.43	284	0.01	3.93	320	0.01
S.C.	5.58	31	0.02	6.50	49	0.01
S. Dak.	11.93	71	6.96	13.12	75	5.83
Tenn.	6.21	49	0.05	7.20	53	0.01
Tex.	12.14	34	0.22	13.87	54	0.13
Utah	5.41	32	0.61	5.57	27	0.58
Vt.	[a]	[a]	0	[a]	[a]	0
Va.	4.43	47	0.49	5.18	66	0.33

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
[a]	[a]	$0	[a]	[a]	$0	$4.14	115
$16.93	57	0.76	$16.28	66	0.51	17.93	80
7.54	109	0.78	7.64	104	0.89	7.81	131
3.24	616	0.01	3.06	367	0.05	3.24	248
4.77	46	4.87	5.01	48	5.15	5.60	52
5.99	24	0.01	7.20	33	0[b]	8.82	51
4.87	36	0.02	5.67	36	0.01	6.93	54
7.39	206	0.01	7.49	152	0.02	8.12	64
11.05	41	0.12	11.57	48	0.19	13.21	54
5.45	33	0.02	6.57	50	0.02	8.01	73
[a]	[a]	0	[a]	[a]	0	[a]	[a]
6.82	55	0.15	7.77	65	0.15	8.60	74
8.81	102	16.41	9.65	113	16.03	10.04	106
9.51	67	0.02	11.38	82	0.02	12.78	189
9.32	69	33.51	10.45	73	31.19	11.32	79
11.64	61	0.07	15.00	82	0.09	16.53	75
7.42	20	0.14	[a]	[a]	0	[a]	[a]
19.90	50	0.02	20.73	65	0.01	22.79	78
[a]	[a]	0	5.22	16	0[b]	5.49	16
5.51	51	0.01	6.47	69	0.01	7.49	125
8.29	87	83.09	8.30	90	73.12	8.91	88
[a]	[a]	0	[a]	[a]	0	[a]	[a]
11.00	71	0.08	12.76	44	0.09	14.49	52
3.98	86	1.17	4.01	100	0.87	4.16	98
3.92	318	0.01	4.04	95	0.03	4.22	155
7.11	26	0.01	7.85	29	0.02	9.65	50
12.82	76	4.01	12.71	77	4.13	13.40	81
7.84	142	0.01	9.35	61	0.01	11.12	84
14.12	42	0.09	15.89	58	0.06	17.22	65
6.87	30	0.35	7.83	34	0.15	8.70	39
[a]	[a]	0	5.40	12	0[b]	6.48	16
5.08	59	0.32	5.55	55	0.28	6.37	68

(continued)

State	1991			1992		
	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Wash.	5.00	112	8.68	4.93	112	5.29
Wis.	8.97	62	0.26	10.41	72	0.18
Wyo.	3.66	67	3.17	4.44	90	4.00

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
5.04	95	4.03	4.98	88	4.40	5.00	92
10.28	65	0.26	10.56	77	0.66	11.50	72
4.37	105	3.37	4.36	104	3.10	4.36	115

Notes: For 1995, no figures are shown for insurance in force because the year was not complete at the time of our review.

Premium rates are based on the weighted average of rates at the 65-percent coverage and average production level.

[a]Data were insufficient to perform analysis.

[b]Although some insurance was in force, the amount was too small to show in this presentation.

Source: GAO's analysis of USDA's data.

Table III.2: Weighted Average Premium Rate, Adequacy of Premium Rate, and Insurance in Force by State for Corn, Crop Years 1991-95

	1991			1992		
State	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Ala.	$12.01	81	$3.29	$12.36	84	$4.53
Ark.	7.71	29	0.48	8.76	30	1.25
Calif.	4.28	434	0.13	4.27	139	0.49
Colo.	5.04	149	41.08	5.19	150	42.20
Conn.	6.21	160	0.04	7.20	289	0.01
Del.	5.81	80	2.79	5.89	83	2.95
Fla.	8.47	42	1.02	10.53	53	1.15
Ga.	9.57	59	7.33	11.16	63	10.85
Idaho	3.55	33	0.16	4.20	26	0.07
Ill.	3.08	67	541.69	3.27	78	677.37
Ind.	3.53	81	176.91	3.64	87	240.25
Iowa	3.54	82	1,032.45	3.50	86	1,085.29
Kans.	4.54	76	80.91	4.60	77	83.55
Ky.	7.33	55	23.32	8.49	70	23.85
La.	5.16	41	10.34	6.10	56	11.63
Maine	6.21	[a]	0[b]	7.20	310	0[b]
Md.	6.06	85	9.86	7.16	106	11.96
Mass.	5.49	97	0.03	6.57	139	0.02
Mich.	7.92	84	21.61	8.22	90	22.30
Minn.	5.70	102	376.62	5.45	102	381.71
Miss.	7.56	32	2.14	8.90	35	3.13
Mo.	8.57	73	66.92	9.15	84	72.82
Mont.	6.83	47	1.38	6.80	54	1.15
Nebr.	4.30	104	480.26	4.18	103	487.24
N.J.	6.97	62	0.21	7.99	84	0.24
N. Mex.	9.81	158	1.18	10.73	197	1.78
N.Y.	7.16	58	2.09	8.42	82	1.29
N.C.	8.63	68	22.84	9.57	78	25.01
N. Dak.	10.87	64	27.12	12.19	78	25.94
Ohio	4.01	89	82.02	4.12	95	104.58
Okla.	6.23	74	3.32	6.20	65	3.41
Oreg.	3.27	40	0.49	3.76	51	0.18
Pa.	7.02	68	12.67	7.26	68	17.97

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
$12.38	85	$3.26	$13.95	$92	3.93	$14.45	88
9.65	26	0.97	11.68	40	1.05	13.95	39
4.35	148	0.57	4.08	350	0.76	3.92	428
5.06	146	42.61	5.00	138	59.56	5.01	120
7.29	134	0.03	7.47	151	0.03	7.47	133
5.13	84	2.52	5.42	86	3.35	5.75	74
10.62	60	0.91	12.63	77	1.02	13.62	76
12.04	73	7.76	13.14	84	8.50	14.06	84
3.99	32	0.25	3.81	34	0.12	4.42	26
3.31	72	635.11	3.79	81	736.01	3.86	82
3.67	75	223.11	4.04	84	260.86	4.15	87
3.52	83	999.58	3.79	90	1,295.15	4.00	78
4.52	74	89.09	5.25	78	109.43	5.63	81
8.49	73	20.89	9.33	85	23.57	9.34	90
6.51	43	7.53	7.53	49	13.27	8.99	58
7.29	470	0[b]	7.02	604	0.02	7.02	755
7.18	94	10.13	7.58	95	12.99	7.93	89
7.20	127	0.08	7.63	143	0.05	7.60	128
8.64	91	44.54	9.14	81	34.18	9.55	71
5.49	101	371.08	5.54	99	630.46	6.14	76
9.21	34	1.31	10.99	37	3.27	13.05	50
9.00	80	61.29	9.70	86	96.32	9.97	83
6.70	51	1.09	7.17	58	1.19	8.00	63
4.15	105	484.13	4.29	99	614.23	4.38	94
8.15	87	0.20	8.58	87	0.24	8.77	75
10.52	215	1.36	10.17	124	1.84	9.90	125
8.08	69	7.66	8.76	57	4.66	9.25	69
9.35	87	20.96	10.31	95	26.28	10.97	89
11.02	77	18.15	11.44	70	25.01	12.51	67
4.08	84	94.51	4.37	92	106.24	4.42	94
6.72	77	3.65	7.07	90	5.49	7.51	86
3.31	32	0.39	3.33	25	0.21	3.94	33
7.47	54	18.93	8.36	61	20.76	9.05	62

(continued)

State	1991 Premium rate per $100 coverage	1991 Adequacy of premium rate (percent)	1991 Insurance in force ($ in millions)	1992 Premium rate per $100 coverage	1992 Adequacy of premium rate (percent)	1992 Insurance in force ($ in millions)
R.I.	[a]	[a]	0	[a]	[a]	0
S.C.	11.32	62	5.06	13.32	67	6.75
S. Dak.	7.34	86	118.91	7.38	94	122.44
Tenn.	9.28	75	3.53	10.32	75	5.44
Tex.	6.89	63	55.89	7.69	54	48.96
Utah	4.53	34	0.27	5.28	26	0.27
Vt.	6.35	216	0.13	7.49	366	0.13
Va.	6.94	42	18.29	8.12	53	16.95
Wash.	[a]	[a]	0	[a]	[a]	0
W. Va.	7.34	37	1.54	8.62	53	1.92
Wis.	7.38	93	57.10	7.34	96	63.48
Wyo.	7.37	71	1.39	7.13	92	1.89

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
[a]	[a]	0	[a]	[a]	0	[a]	[a]
13.59	74	6.00	15.17	88	7.96	16.44	83
7.55	92	111.62	7.69	90	209.34	8.23	82
10.14	80	4.34	11.18	90	6.35	11.46	97
8.36	51	56.06	9.02	82	69.60	8.76	84
5.64	10	0.09	5.03	23	0.18	5.86	43
7.07	340	0.13	7.02	154	0.11	6.97	124
8.52	56	15.27	9.56	65	18.88	10.44	65
[a]	[a]	0	[a]	[a]	0	[a]	[a]
9.21	44	1.68	10.67	55	1.86	11.90	58
7.87	95	111.98	8.62	88	160.96	9.14	79
7.04	112	1.86	7.09	96	3.17	7.44	72

Notes: For 1995, no figures are shown for insurance in force because the year was not complete at the time of our review.

Premium rates are based on the weighted average of rates at the 65-percent coverage and average production level.

[a]Data were insufficient to perform analysis.

[b]Although some insurance was in force, the amount was too small to show in this presentation.

Source: GAO's analysis of USDA's data.

Table III.3: Weighted Average Premium Rate, Adequacy of Premium Rate, and Insurance in Force by State for Cotton, Crop Years 1991-95

	1991			1992		
State	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Ala.	$8.50	104	$40.26	$8.96	103	$42.76
Ariz.	3.70	251	11.01	3.77	268	13.34
Ark.	9.45	70	16.47	10.57	71	12.95
Calif.	3.59	107	8.96	3.58	113	5.35
Fla.	11.33	70	3.61	13.25	113	4.77
Ga.	13.69	93	27.55	16.13	105	30.28
Kans.	14.57	19	0.06	14.62	33	0.10
La.	11.49	67	49.21	12.29	70	38.38
Miss.	6.77	69	33.52	7.75	71	29.64
Mo.	13.22	121	0.33	12.15	127	0.55
N. Mex.	11.32	71	3.43	12.89	80	3.06
N.C.	11.69	152	7.91	11.87	104	8.07
Okla.	9.84	79	16.12	9.39	82	17.84
S.C.	15.93	93	6.30	16.97	102	5.35
Tenn.	9.10	80	5.98	10.65	89	6.63
Tex.	13.80	84	569.60	15.13	92	515.97
Va.	14.72	133	0.27	13.93	221	0.22

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
$8.93	96	$44.10	$9.27	94	$56.31	$9.62	94
3.54	284	55.95	3.79	168	38.42	3.87	143
10.65	74	9.26	11.49	57	10.13	12.93	61
3.76	132	14.72	3.89	126	9.75	3.81	112
12.99	88	4.33	13.63	87	5.99	13.72	88
15.97	110	35.47	13.55	96	47.91	14.16	92
15.93	35	0.02	19.39	41	0.01	19.46	33
12.95	69	32.07	14.25	71	32.38	15.20	74
8.00	70	28.17	8.43	78	37.98	9.10	72
12.18	126	0.51	11.60	114	1.27	11.65	113
14.17	86	3.23	15.57	87	3.35	17.20	98
11.35	90	10.10	11.68	100	14.68	11.50	109
10.60	80	20.97	12.75	86	21.42	14.06	92
16.40	105	5.88	15.59	101	6.37	15.26	98
9.94	76	7.05	10.34	74	12.08	11.45	81
15.70	96	583.23	18.26	100	606.88	19.50	106
12.32	710	0.56	12.24	232	0.98	11.61	98

Notes: For 1995, no figures are shown for insurance in force because the year was not complete at the time of our review.

Premium rates are based on the weighted average of rates at the 65-percent coverage and average production level.

Source: GAO's analysis of USDA's data.

Table III.4: Weighted Average Premium Rate, Adequacy of Premium Rate, and Insurance in Force by State for Grain Sorghum, Crop Years 1991-95

	1991			1992		
State	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Ala.	$5.96	20	$0.10	$6.82	26	$0.06
Ark.	5.83	32	3.32	6.71	36	6.09
Colo.	11.80	44	1.55	12.95	56	1.15
Del.	4.95	15	0.06	5.85	23	0.03
Fla.	8.75	40	0.02	10.62	29	0.02
Ga.	7.90	22	0.12	9.13	31	0.11
Ill.	6.19	42	2.32	6.98	46	3.11
Ind.	5.24	44	0.07	5.91	83	0.14
Iowa	6.40	61	0.07	7.57	42	0.12
Kans.	7.36	79	75.34	8.34	98	80.53
Ky.	4.91	59	0.07	5.67	145	0.07
La.	4.80	24	4.17	5.85	33	3.81
Md.	4.14	62	0.02	4.77	71	0.03
Minn.	[a]	[a]	0	[a]	[a]	0
Miss.	4.95	40	0.43	5.92	34	0.84
Mo.	8.20	53	5.13	9.64	63	5.42
Nebr.	4.95	107	48.71	5.61	124	55.40
N. Mex.	9.89	41	3.41	11.67	40	3.55
N.C.	7.94	41	0.03	9.75	143	0.01
N. Dak.	17.91	23	0.03	20.30	24	0.01
Ohio	3.87	7	0[b]	4.41	13	0.01
Okla.	8.48	62	2.82	8.98	67	2.58
Pa.	5.85	49	0.03	6.93	26	0.04
S.C.	6.62	11	0.02	8.28	42	0[b]
S. Dak.	9.73	52	3.67	11.54	79	5.72
Tenn.	5.01	19	0.10	5.61	29	0.16
Tex.	7.71	69	81.50	8.45	75	97.40
Va.	6.32	26	0.10	7.20	32	0.05
Wis.	7.47	20	0.02	7.56	24	0[b]

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
$7.60	15	$0.03	$9.66	35	$0.03	$11.51	38
7.33	31	2.22	9.14	40	3.00	10.72	40
13.36	57	1.24	16.47	75	1.32	16.95	75
6.21	31	0.04	5.98	35	0.05	6.49	42
11.10	34	0.01	13.83	45	0.01	16.07	50
9.51	24	0.07	10.63	31	0.12	12.76	32
7.43	52	2.32	8.70	62	2.17	9.47	68
5.81	76	0.12	6.60	88	0.12	7.38	132
7.50	68	0.06	8.60	97	0.06	10.26	58
8.66	93	69.61	8.79	97	79.90	9.01	95
5.83	35	0.03	6.43	92	0.16	7.15	44
6.18	30	2.62	6.97	32	3.02	8.30	43
4.67	58	0.04	5.64	109	0.04	6.77	41
9.45	229	0.01	9.63	311	0[b]	9.63	79
6.12	32	0.40	7.21	34	0.34	8.60	42
10.28	67	3.87	10.88	74	5.14	11.94	81
5.54	112	40.89	5.49	117	44.80	5.58	105
13.12	46	3.27	16.25	57	3.91	18.39	62
10.09	36	0.02	10.06	186	0.01	12.00	141
18.52	27	0.01	[a]	[a]	0	[a]	[a]
4.41	20	0[b]	[a]	[a]	0	[a]	[a]
10.62	74	2.06	11.84	73	2.56	12.66	74
7.06	44	0.05	8.55	26	0.02	10.26	33
7.71	20	0.01	[a]	[a]	0	11.42	24
11.45	88	3.33	11.94	71	2.75	13.33	75
6.33	20	0.07	7.52	43	0.06	9.00	51
9.31	79	66.02	9.83	77	73.33	10.60	89
7.32	37	0.09	9.08	52	0.12	10.96	44
7.68	29	0[b]	8.37	32	0[b]	10.08	34

Notes: For 1995, no figures are shown for insurance in force because the year was not complete at the time of our review.

Premium rates are based on the weighted average of rates at the 65-percent coverage and average production level.

[a]Data were insufficient to perform analysis.

[b]Although some insurance was in force, the amount was too small to show in this presentation.

Source: GAO's analysis of USDA's data.

Table III.5: Weighted Average Premium Rate, Adequacy of Premium Rate, and Insurance in Force by State for Soybeans, Crop Years 1991-95

	1991			1992		
State	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Ala.	$11.16	56	$3.32	$12.30	59	$2.13
Ark.	12.46	67	21.43	13.83	70	17.07
Del.	7.60	122	2.13	6.79	116	1.98
Fla.	9.78	36	0.29	11.28	43	0.41
Ga.	14.90	63	3.28	16.34	63	3.16
Ill.	3.22	103	248.41	3.04	102	306.59
Ind.	3.49	95	88.63	3.43	93	107.37
Iowa	3.09	149	505.28	2.98	147	465.18
Kans.	6.25	48	49.87	7.26	65	46.83
Ky.	9.27	66	6.32	9.69	70	5.33
La.	14.76	68	19.60	17.06	75	17.83
Md.	8.05	94	3.49	7.33	93	3.57
Mich.	6.85	77	14.32	7.23	85	13.44
Minn.	4.75	129	349.02	4.61	127	319.27
Miss.	10.25	54	22.20	11.61	58	19.74
Mo.	6.61	76	82.59	7.34	86	74.54
Nebr.	3.73	80	112.12	3.77	87	108.76
N.J.	6.93	38	0.58	7.10	44	0.45
N.Y.	7.12	41	0.08	7.57	38	0.04
N.C.	10.53	68	5.37	12.45	78	4.02
N. Dak.	6.05	81	25.60	6.23	92	26.52
Ohio	4.69	110	64.84	4.59	108	70.84
Okla.	12.67	47	2.45	13.78	52	0.91
Pa.	6.32	50	0.91	6.00	67	1.32
S.C.	18.74	90	0.82	21.91	96	0.46
S. Dak.	5.16	92	94.37	5.14	98	97.71
Tenn.	9.74	58	3.54	10.66	62	2.69
Tex.	16.90	57	2.03	19.16	68	2.83
Va.	5.07	42	4.64	5.98	54	3.75
W. Va.	4.90	60	0.06	5.66	52	0.08
Wis.	5.39	80	5.28	5.26	85	7.11

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
$12.30	60	$1.52	$12.77	67	$1.71	$13.99	76
14.04	69	17.11	15.41	78	25.41	16.80	80
6.52	113	1.64	6.74	121	2.45	6.76	102
11.61	47	0.29	13.06	58	0.38	14.61	63
16.84	70	2.65	18.97	81	4.90	20.11	82
2.95	95	309.48	3.31	104	346.16	3.31	105
3.38	90	107.90	3.60	99	120.31	3.66	101
2.89	141	479.86	3.01	154	597.01	3.05	123
7.59	63	52.66	8.42	73	70.73	8.71	74
9.54	70	4.56	9.88	75	7.95	10.54	82
17.18	68	18.17	17.94	71	19.79	18.38	70
7.31	91	3.73	7.89	88	6.33	7.92	81
7.32	92	16.72	7.56	90	18.30	7.66	91
4.52	131	323.53	4.65	126	455.52	4.98	101
11.63	59	19.94	12.15	67	24.60	13.04	70
7.22	81	70.82	7.70	87	115.65	8.12	86
3.77	86	112.65	4.02	93	138.75	4.05	91
6.96	45	0.53	7.94	54	0.73	8.08	58
8.12	61	0.39	9.36	56	0.25	9.40	84
12.96	84	4.70	13.76	84	7.40	14.02	83
6.08	98	24.21	6.22	105	32.31	6.57	94
4.42	100	74.94	4.59	108	77.66	4.61	112
15.38	54	1.77	16.79	57	2.82	18.31	71
6.04	51	1.11	6.79	59	1.47	6.90	64
21.03	103	0.83	21.80	100	1.37	22.54	95
5.25	93	79.39	5.40	94	162.75	5.65	84
10.28	64	2.29	11.03	82	4.26	11.99	79
21.63	74	2.67	22.37	83	3.58	24.07	89
6.36	52	4.36	7.12	64	11.22	8.00	64
6.24	49	0.13	6.54	63	0.14	7.46	105
5.51	83	8.88	5.94	78	14.91	6.23	71

Notes: For 1995, no figures are shown for insurance in force because the year was not complete at the time of our review.

Premium rates are based on the weighted average of rates at the 65-percent coverage and average production level.

Source: GAO's analysis of USDA's data.

Table III.6: Weighted Average Premium Rate, Adequacy of Premium Rate, and Insurance in Force by State for Wheat, Crop Years 1991-95

	1991			1992		
State	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
Ala.	$6.22	46	$1.70	$7.40	45	$1.26
Ariz.	[a]	[a]	0	[a]	[a]	0
Ark.	6.34	36	10.13	7.32	41	14.80
Calif.	9.57	50	2.88	10.05	51	2.54
Colo.	12.82	136	40.99	12.49	125	41.76
Del.	2.34	1,383	0.14	2.25	900	0.07
Fla.	8.03	39	0.32	9.33	49	0.23
Ga.	7.40	69	5.82	8.49	81	3.96
Idaho	4.05	53	23.74	4.27	58	25.71
Ill.	4.68	50	7.77	5.10	53	9.69
Ind.	3.67	83	2.39	3.74	79	3.03
Iowa	9.36	59	0.32	9.80	71	0.39
Kans.	6.68	105	263.33	6.61	99	301.16
Ky.	6.05	85	1.57	6.63	100	1.82
La.	8.06	27	5.57	9.31	31	3.91
Maine	[a]	[a]	0	[a]	[a]	0
Md.	2.51	306	0.20	2.59	161	0.15
Mich.	4.25	63	3.50	4.73	70	3.88
Minn.	7.46	96	112.07	8.12	111	121.58
Miss.	7.50	38	3.78	8.66	38	3.11
Mo.	7.95	71	11.40	8.89	80	9.96
Mont.	7.14	69	208.06	7.55	70	229.44
Nebr.	7.25	118	73.15	7.11	112	76.03
Nev.	[a]	[a]	0	[a]	[a]	0
N.J.	2.61	[a]	0.01	2.64	2,008	0.01
N. Mex.	14.48	47	5.59	13.91	51	4.14
N.Y.	4.34	99	0.09	5.06	118	0.12
N.C.	6.14	62	2.09	7.00	72	1.81
N. Dak.	6.75	85	435.68	7.49	94	466.22
Ohio	3.15	99	3.45	3.24	95	4.50
Okla.	7.00	93	75.23	7.16	90	85.71
Oreg.	3.06	151	34.32	3.14	146	40.19
Pa.	2.40	136	0.06	2.59	80	0.09

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
$7.93	41	$0.82	$9.00	47	$0.80	$10.79	52
[a]	[a]	0	[a]	[a]	0	3.89	296
7.67	36	13.40	9.16	44	9.84	11.35	56
10.60	53	2.10	9.39	55	1.59	10.16	57
12.60	133	49.22	12.63	127	55.03	12.49	123
2.07	337	0.10	1.89	270	0.13	2.16	359
9.00	41	0.20	10.40	57	0.17	11.75	71
8.65	79	3.99	8.90	85	4.48	9.57	97
4.23	59	26.65	4.71	61	23.99	7.24	67
4.76	46	18.91	5.73	41	11.73	6.66	44
3.33	71	11.08	3.94	55	6.63	4.56	61
9.24	62	0.38	10.66	56	0.34	11.99	56
6.76	97	303.38	6.74	90	310.42	7.13	90
6.38	63	1.84	6.81	62	1.81	7.39	77
8.99	26	1.85	10.75	29	1.97	13.24	34
[a]	[a]	0	[a]	[a]	0	[a]	[a]
2.55	172	0.12	2.44	217	0.15	2.58	505
4.64	70	4.01	4.88	74	5.90	5.53	73
7.98	98	119.41	8.69	110	135.47	9.20	90
8.72	33	3.16	10.13	42	2.21	12.50	65
8.60	70	11.57	9.82	78	12.79	10.68	78
7.38	68	229.72	8.56	74	232.72	9.20	80
7.19	107	82.70	7.27	94	82.00	7.67	94
[a]	[a]	0	6.39	32	0.18	7.65	45
[a]	[a]	0	[a]	[a]	0	[a]	[a]
15.13	58	3.54	17.13	66	3.69	17.78	70
5.26	84	0.02	5.43	52	0.08	[a]	[a]
6.92	74	1.91	7.17	80	2.68	7.85	90
6.96	86	452.21	7.16	89	512.90	7.80	90
3.06	94	7.63	3.40	76	9.09	3.91	80
6.95	84	104.11	6.93	82	116.59	7.47	82
3.02	122	39.82	2.99	105	38.61	2.98	118
2.66	91	0.05	2.74	119	0.09	2.96	96

(continued)

State	1991			1992		
	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)
S.C.	7.48	62	1.38	8.71	75	1.05
S. Dak.	11.13	83	66.98	11.78	92	80.57
Tenn.	7.06	59	1.20	8.16	56	1.57
Tex.	11.31	71	84.05	11.76	80	74.64
Utah	7.18	57	3.45	8.28	63	2.65
Va.	5.36	63	1.00	5.78	81	0.97
Wash.	3.20	112	90.67	3.35	110	115.96
W. Va.	4.39	17	0.04	4.15	40	0.03
Wis.	6.01	46	0.32	6.91	56	0.34
Wyo.	7.37	76	5.64	7.47	84	5.75

1993			1994			1995	
Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)	Insurance in force ($ in millions)	Premium rate per $100 coverage	Adequacy of premium rate (percent)
8.92	78	1.28	9.18	85	1.88	10.24	104
12.04	90	77.62	12.08	89	82.00	10.82	95
8.50	43	0.65	9.09	44	0.55	10.88	58
11.48	73	87.55	11.95	78	80.94	12.70	84
8.91	57	3.08	9.93	59	1.64	10.66	68
6.01	71	0.69	6.18	69	1.13	6.90	82
3.42	97	103.71	3.50	95	97.40	3.34	109
4.33	35	0[b]	5.40	20	0[b]	6.66	17
6.92	55	3.01	7.84	38	2.25	9.06	58
7.34	83	6.06	7.34	85	6.32	7.46	85

Notes: For 1995, no figures are shown for insurance in force because the year was not complete at the time of our review.

Premium rates are based on the weighted average of rates at the 65-percent coverage and average production level.

[a]Data were insufficient to perform analysis.

[b]Although some insurance was in force, the amount was too small to show in this presentation.

Source: GAO's analysis of USDA's data.

Estimated Savings From USDA's Program to Target High-Risk Farmers

To estimate the annual savings resulting from USDA's program to target high-risk farmers for individual rate increases and/or decreases in their insured production levels, we obtained summary information from USDA for crop years 1983 through 1991 on the premiums paid by and the claims paid to 22,551 policyholders included in this program for crop year 1993.[1] We also obtained data on the insurance experience of those targeted for the program in crop years 1992 and 1993 who continued to purchase insurance. We reviewed the estimate of savings made by a contractor and identified the reasons for differences between the contractor's estimate and our estimate.

We determined that savings from the high-risk program consisted of three elements: (1) the claims exceeding premiums that were avoided because farmers dropped out of the crop insurance program once they were targeted for higher rates; (2) the additional premiums paid by farmers who, once targeted, remained in the program and paid higher rates; and (3) the reduced claims paid to farmers who, once targeted, remained in the crop insurance program.

GAO's Estimate

To make our estimate, we first determined to what extent farmers continued to purchase crop insurance once they were targeted for the high-risk program. Using USDA's analysis of farmers' decisions for crop year 1992,[2] we found that (1) 36.7 percent had stopped purchasing crop insurance before being targeted for the high-risk program, (2) 41.2 percent stopped purchasing crop insurance once targeted, (3) 18 percent continued purchasing crop insurance at higher rates, and (4) 4.1 percent continued purchasing crop insurance at the same rate. As table IV.1 shows, we estimate that the resulting savings total $32.9 million.

[1]This was the most recent year for which complete information was available at the time we prepared our estimate.

[2]This was the most recent period covered by the USDA analysis available at the time we prepared our estimate.

Table IV.1: Estimated Savings Resulting From Targeting High-Risk Farmers for Increased Premiums And/or Decreased Production Levels, Crop Year 1993

Dollars in millions

Source of savings	Amount
Claims exceeding premiums that were avoided because of farmers who, once targeted, dropped out of the program	$25.3
Additional premiums paid by farmers who, once targeted, remained in the program and paid higher premiums	2.0
Claims avoided for farmers who, once targeted, remained in the program but had reduced claims	5.6
Total estimated savings	**$32.9**

To arrive at our estimate of $25.3 million in savings resulting from farmers canceling their insurance, we subtracted the total premiums paid by the 1993 target group for 1983 through 1991 ($152.5 million) from the total claims paid over the same period ($704.4 million) to determine the total amount that the claims paid exceeded the premiums ($551.9 million). We calculated an annualized estimate by which the claims paid exceeded the premiums ($61.3 million) by dividing the result by 9 (the number of years in the period 1983-91). We multiplied this amount by 41.2 percent, the percentage of farmers who we estimate quit purchasing crop insurance once targeted for the high-risk program.

To arrive at our estimated $2 million in additional premiums for crop year 1993, we divided the premiums the target group paid for 1983 through 1991 by 9 to arrive at the average annualized premiums paid ($16.9 million). We multiplied the result by 67 percent, the average increase in premiums that farmers paid the first year they were in the high-risk program,[3] to arrive at the increased premiums the group would have paid if all continued to purchase insurance ($11.4 million). We multiplied this amount by 18 percent, the percentage of farmers that we estimate continued to purchase crop insurance.

To arrive at our estimated $5.6 million in decreased claims for crop year 1993, we multiplied our estimate of the annualized amount that the claims exceeded the premiums ($61.3 million) by 51 percent, the average decrease in the amount of claims farmers received the first year they were in the high-risk program,[4] to arrive at the decrease in the claims the group would have received if all continued to purchase insurance ($31.3 million).

[3]The 67 percent is based on our analysis of farmers included in the program for the first time in crop year 1993.

[4]The 51 percent is based on our comparison of the total claims paid in 1992 and 1993 to farmers who were in the high risk program in 1993 for the first time.

We multiplied this amount by 18 percent, the percentage of farmers that we estimate continued to purchase crop insurance.

Differences Between GAO'S and Contractor's Estimates

The primary reason for the differences between the USDA contractor's estimate of $70 million in annual savings from the high-risk program and our estimate of $32.9 million is the difference in the number of farmers affected by the program. The USDA contractor's estimate was based on the assumption that USDA would select 2 percent of all policyholders for the program. In practice, however, USDA selected 1.5 percent. Furthermore, over one-third of those identified had already stopped buying crop insurance before being selected for the program. Therefore, the percentage of policyholders who were actually affected by the program dropped to about 1 percent.

Estimated Savings From USDA's Actions to Improve the Accuracy of Farmers' Production Levels

To estimate USDA's savings from the changes in the rules for calculating a farmer's production level for crop year 1994,[1] we obtained information on the 2,209,177 insurance policy units for the six crops we reviewed from USDA's database for crop year 1994. According to USDA officials, the primary savings would result from claims payments that were reduced because of lower insured production levels. Therefore, we estimated the reduction in production levels that USDA approved for 1994. Our calculations were based on 1,174,037 policy units for which complete information was available.

According to our analysis, USDA decreased the approved production levels for policy units for those farmers who had 2 years or less actual production experience and increased the approved levels for policy units for those farmers who had 3 years or more of experience. (See table V.1.)

Table V.1: Estimated Changes in Farmers' Approved Production Levels From Crop Year 1993 to Crop Year 1994

Number of years of actual production	Number of policy units	Percentage change in production level from 1993 to 1994
0	298,816	–35.0
1	295,738	–16.2
2	215,051	–3.6
3	191,715	+2.4
4	42,587	5.2
5	32,252	+3.4
6	21,903	+3.0
7	21,422	+3.2
8	20,029	+1.8
9	19,131	+1.0
10	15,393	.0
All combined	1,174,037	–12.8

Source: GAO's analysis of USDA's data.

To estimate the impact of the changes, we divided the policy units into the two groups and calculated a weighted average change for each group, as follows:

- Policy units based on actual production experience of 2 years or less whose approved production levels were reduced from 1993 to 1994. The weighted average reduction was 20.15 percent.

[1]USDA refers to production levels as yield.

- Policy units based on actual production of 3 or more years that were not subject to any reductions in approved production levels. These policy units had a weighted average increase of 2.85 percent in approved production levels.

In developing our estimate, we assumed that (1) the experience for all crops would be about the same as the experience for the six crops we reviewed; (2) recent premiums of about $750 million annually for all crops were representative; and (3) the claims paid would be $1.10 for each $1 in premiums, as the law requires. In addition, we used USDA's assumption that claims payments would change by 1.5 percent for each 1-percent change in approved production levels. We also weighted the percentage change in production levels from 1993 to 1994—for the policy units for which we had complete information—to all the policy units.

We initially estimated that claims would drop by $102 million for farmers with an actual production history for 2 years or less and increase by $21 million for farmers with an actual production history for 3 years or more. The estimated net savings is $81 million. We arrived at our estimate as follows:

- For the farmers with 2 years or less of production history, we multiplied the 1994 premiums of $306 million by the expected loss ratio of 1.1 for an estimated $337 million in total claims payments. We then multiplied the expected decrease of 20.15 percent in production levels by 1.5 percent to determine the expected change in claims payments, for a total decrease of 30.23 percent, or $102 million.
- For the farmers with 3 years or more of production history, we multiplied the 1994 premiums of $444 million by the expected loss ratio of 1.1 for an estimated $488 million in total claims payments. We then multiplied the expected increase of 2.85 percent in production levels by 1.5 percent to determine the expected change in claims payments, for a total increase of 4.275 percent, or $21 million.

Our initial estimate of $81 million is within the range of savings that USDA estimated in its blueprint—from about $75 to $112 million.[55] However, USDA did not include in its estimate the increase in approved production levels for farmers with 3 or more years of production history. If USDA's

[55]Although USDA's blueprint does not specify the dollar amount of savings expected, the Department estimated reductions in claims payments from $1.40 for every $1.00 in premiums to between $1.25 and $1.30, or between 7.15 and 10.72 percent. These percentages were applied to $1.05 billion in claims payments—the average $750 million in premiums in recent years multiplied by 140 percent—resulting in a range of about $75 million to $112 million.

estimate would have considered the $21 million increase, our estimate would have been near to the midpoint of USDA's estimate.

In implementing its changes in the rules, USDA imposed the following limitations:

- decreases were limited to no more than 10 percent annually and increases to no more than 15 percent and
- beginning farmers were excluded.

To estimate the impact of these limitations, we compared what the 1994 approved production levels would have been without any limitations with the production levels that USDA approved. Following the same methodology as in our previous calculation, we calculated that these limitations reduced the estimated $81 million in savings by about $37 million. Thus, we estimated the savings from USDA's changes in the rules for calculating approved actual production levels to be about $44 million for crop year 1994.

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