Review of U.S. Farm Programs

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This publication was commissioned by AGree to inform and stimulate dialogue about policy reform; it does not represent official AGree positions. The views expressed here are those of the individual authors.

Foreword

AGree seeks to transform food and agricultural policy over the next eight years. Our goals are to:

- Improve agricultural productivity and environmental performance;
- Enhance the availability of and access to nutritious foods; and
- Promote opportunities for rural communities to succeed economically.

We recognize that this complex challenge requires work over the long term and cannot be solved quickly or through a single policy vehicle. AGree is taking a deliberative, inclusive approach to developing a policy framework that can meet the challenges ahead. We are undertaking research to understand problems and assess options, and we are engaging a broad array of stakeholders to contribute insights, guidance, and ideas that lead to meaningful, evidence-based solutions.

This publication represents the first in a series of background papers and thought pieces intended to lay the groundwork for a common understanding of the complex issues and policies related to food and agricultural policy across diverse audiences. Our goal is to inform discussion and stimulate debate about future directions for policy.

This AGree backgrounder was written by Stephanie Mercier, former chief economist for the Senate Agriculture Committee. It provides a detailed and comprehensive overview of federal farm programs (e.g., farm support, disaster assistance, insurance, specialty crop, and conservation programs), including historical background and information about the distribution of benefits. As this paper makes clear, the farm programs now in place represent an accretive accumulation of policies and programs rather than a set of programs designed to effectively accomplish clearly articulated public policy objectives. As Congress seeks to reform farm programs to help address the nation's fiscal challenges, we must develop a clear set of objectives to develop programs that serve the long-term public good.

We hope you find this paper a helpful resource and source of ideas. And we hope you will join the effort to transform federal food and agriculture policy to meet the challenges of the future.

Deb Atwood
Executive Director

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Executive Summary

The initial objective of U.S. farm support policy, enacted in the early years of the Great Depression, was to raise farmers' incomes. At the time, crop prices were so low that some farmers chose to destroy their crops rather than deliver them to market, as harvesting and transport costs would have exceeded revenue.

In many states of the Great Plains, farmers had few crops at all because of the multiple droughts and subsequent loss of topsoil during the Dust Bowl, a period that lasted nearly the full decade of the 1930s. Although the financial impacts of the Great Depression were felt throughout the U.S. economy, the period was particularly hurtful to U.S. farmers, who had few if any alternatives to farming to earn income in the countryside. Rural residents accounted for 45 percent of U.S. population, making them a politically potent force. By one estimate, per-capita income for farmers was only one-third that of the rest of the U.S. population in the 1930s.[1]

After nearly 80 years of providing support to U.S. farmers, policymakers have not moved very far from their original rationale, even though the structure and composition of U.S. agriculture has changed considerably. Indeed, average farm household income now far exceeds average household income. With few exceptions, U.S. farm policy has tended to be accretive, with Congress choosing to modify existing programs and/or add new ones rather than subtract programs from the mix. While the majority of programs and expenditures are still aimed at providing income support and assurance to growers of major commodities, significant programs to advance conservation objectives were added in the 1985 and 2002 farm bills.

Summary of U.S. farm safety net programs

U.S. row crop and dairy farmers have an array of programs from which they can benefit—some specifically designed to support crop revenue or commodity prices, some designed to assist in the event of significant losses, some intended to help provide loans for farmers with less-than-stellar credit worthiness, and some designed to assist farmers in idling environmentally sensitive lands or adopting better conservation practices. Producers of other commodities, such as livestock and specialty crops, are eligible for the same farm loan, crop insurance, and conservation programs as their row crop counterparts. However, the traditional farm price or income support programs are not available for livestock products (Table 1). Specialty crop producers have a separate set of programs of their own, none of which involve direct support to prices or income.

Farm Support Programs – As noted previously, Congress typicallymodifies existing farm support programs and/or adds new programs, rather than subtracting programs from the mix. When crop prices fell in the late 1990s, for example, Congress did not reverse the decision they made in 1996 to set up decoupled payments (i.e., the direct payment program). Instead, Congress simply provided additional ad hoc payments to farmers each year between 1998 and 2001 (totaling more than $19 billion for the period), terming the new program *market loss assistance payments*. Those ad hoc payments were turned into a permanent component of the farm safety net in the 2002 farm bill, in the form of a price-based Countercyclical Payment (CCP) program. The existing elements of the farm safety net remained intact. Similarly, an effort to replace that CCP program with a revenue-based program in the 2008 farm bill was turned back, and the new revenue program was instead offered as an alternative to the CCP for farmers, as yet another addition to the farm safety net. Longstanding separate price-support programs for dairy and sugar producers have been maintained, with additional elements added in the 2002 and 2008 farm bills.

Table 1 | Summary of Major Farm Programs

Program Title	FY 2010 spending	Established	Objective	Share of payments to top 10%	Share of payments to bottom 80%	Beneficiaries
Marketing assistance loan	$87 million for 2009 crop year	1985 farm bill	Income support	60 percent	19 percent	Producers of all row crops plus honey, wool, and mohair
Countercyclical payment	$89 million for 2009 crop year	2002 farm bill	Partially decoupled income support	76 percent	11 percent	All row crop producers w/ program history
Average Crop Revenue Election(ACRE)	$450 million for 2009 crop year	2008 farm bill	Revenue support	50 percent	31 percent	All row crop producers w/ program history
Direct payment	$4.9 billion	1996 farm bill	Decoupled income support	67 percent	15 percent	All row crop producers w/ program history
Sugar loan and allotments	No direct outlays	Agriculture and Food Act of 1981	Price support	Not applicable	Not applicable	Sugar sector
Dairy price support	$40 million in dairy purchases	Agricultural Adjustment Act of 1933	Price support	Not applicable	Not applicable	Dairy farmers
Milk Income Loss Contract	$181 million	2002 farm bill	Income support	50 percent	28 percent	Dairy farmers
Crop insurance	$5.7 billion for 2009 crop year	1981 Federal Crop Insurance	Insure against crop losses	Not available	Not available	Producers of all insurable crops
Supplemental Revenue Assurance (SURE)	$2 billion for 2008 crop year	2008 farm bill	Insure against crop revenue losses	45 percent	34 percent	Producers of all crops
Direct and guaranteed loans	$6 billion program level, $147 million cost	Consolidated Farm & Rural Development Act of 1961	Provide operating and capital loans	Not applicable	Not applicable	All farmers; capped amount
Conservation Reserve Program (CRP)	$1.9 billion	1985 farm bill	Idle erodible lands	58 percent	25 percent	All farmers; total capped acres
Environmental Quality Incentive Program (EQIP)	$1.2 billion	1985 farm bill	Help adoption of conservation practices	40 percent	31 percent	All farmers; annual capped funding
Conservation Stewardship Program (CSP)	$655 million	2002 farm bill	Help adoption of conservation practices	37 percent	41 percent	All farmers; annual capped acres

Note: Concentration of payments data available on EWG website:http://farm.ewg.org/. See Glossary for description of programs.

Congress has typically sought to maintain a consistent program structure for all program crops, with the current main elements being a marketing assistance loan program, a countercyclical payment program (either price-based or revenue-based), and a direct payment program. The statutory structure allows some details within each component to differ between crops, such as how the market price setting the repayment rate for the loan program is determined. These differences can be amplified depending on how the U.S. Department of Agriculture (USDA) Farm Service Agency, which oversees the main commodity programs, crafts the rules and regulations to operate the programs. However, the U.S. government's commitment to modify the programs that support cotton producers—a commitment that is necessary to bring the United States into compliance with the findings of multiple dispute settlement panels in a case under the World Trade Organization (WTO) originally brought by the government of Brazil in 2003—will represent a severe test of policymakers' historical preference for consistent farm program structure. If Congress fails to honor that commitment, Brazil will be free to impose formidable sanctions on U.S. trade interests.

Disaster-Assistance Programs – In addition to programs intended to support farmers' incomes or (in the case of dairy and sugar) commodity prices, the U.S. government has a separate array of programs intended to help farmers cope with losses occurring as a result of natural disasters. As with the commodity programs described above, the process of developing agricultural disaster assistance programs has been one of accretion, with programs being added over time to address perceived gaps in coverage, with few if any of them ever being eliminated. Almost every new disaster-assistance program over the last few decades has been established with the stated goal of ending the use of ad hoc programs passed by Congress to satisfy the demands of constituent groups who have recently faced a serious natural disaster. But through fiscal year (FY) 2010, that goal had not been met.

Federal Crop Insurance Program – The federal crop insurance program, established in 1981, subsidizes crop loss insurance. It now covers more than 250 million acres of cropland and has cost an average of approximately $5.4 billion in each of the last five years. In the 2008 farm bill, the Supplemental Revenue Assurance (SURE) program and four related disaster assistance programs were added to the mix, provided as a complement to the existing crop insurance program. The annual cost of these programs is approximately $2 billion.

Specialty Crop Programs – In the 2008 farm bill, for the first time, groups representing specialty crop producers were able to muster a coalition of sufficient political weight to enable them to demand a tranche of funding devoted to programs specifically addressing their members' needs. The horticulture and organic agriculture title—the first farm bill title devoted to specialty crop issues—was funded at about $1 billion over the 2008–2017 period. Unlike their counterparts in the row crop sector, representatives of specialty crop producers have not sought a farm payment safety net to support their prices or incomes. In fact, they have specifically rejected such a path, fearing it could lead to an expansion of horticultural crop production and thus a weakening of their market power. Prior to the 2008 farm bill process, their main focus was to retain the provision that barred program crop producers from planting fruits and vegetables on their program acres; this is the so-called *planting flexibility restriction*. Their rationale for this position is that, otherwise, program crop producers would be able to "cross-subsidize" their specialty crop production, putting the non-program crop producers at a competitive disadvantage. In the 2008 farm bill, the largest program in funding terms in the specialty crop title was the specialty crop block grant program (at $466 million over five years), which distributes funds to state governments based on their share of U.S. specialty crop production and gives them broad discretion as to how it could be spent, as long as it "improve[s] the competitiveness of U.S. specialty crops."

Conservation Programs – Incentives to encourage U.S. farmers to adopt conservation practices have been a part of U.S. farm programs since the very beginning, as it was recognized that poor tillage practices contributed

significantly to the damage to Midwest and Great Plains farmland during the 1930s Dust Bowl. For much of that period, conservation programs were also driven by the need to remove marginal land from production for the purpose of discouraging surplus production, a concept known as *soil banking*. In the 1980s, policymakers perceived a need to focus directly on conservation needs, rather than rely solely on the self-interest of farmers to preserve the natural environment. A major step in the 1985 Food Security Act was to require farmers to develop approved conservation plans for highly erodible lands or wetlands they cultivated or risk losing eligibility for a range of farm program benefits, a set of rules under the rubric of "conservation compliance." These rules were amended and refined in subsequent farm bills. Current conservation compliance rules apply to participation in every major USDA farm support, working lands, and loan program, except for the federal crop insurance program.[2] Recent efforts to include crop insurance have been unsuccessful; most row crop producers are already covered by conservation compliance rules through their participation in other programs, but specialty crop producers generally are not, and they have argued that the cost of coming into compliance would be prohibitive in some regions and would thus discourage farmers from participating in crop insurance at all.

The 1985 farm bill also marked the establishment of programs—specifically, the Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP)—devoted to identifying and setting aside environmentally sensitive farmland using objective criteria. The previous approach required individual farmers to set aside their most marginal farmland, which in practice meant that high-quality farmland was idled in some parts of the country, while in other places some highly erodible farmland remained in cultivation. Within a decade or so after the CRP and WRP were established, it was recognized that there was a need to better coordinate resources devoted to improving conserving practices on working farmland, which led to the introduction of new programs in the 1996 and 2002 farm bills—notably the Environmental Quality Incentives Program (EQIP), and the Conservation Security Program (CSP).[3]

Distribution of benefits

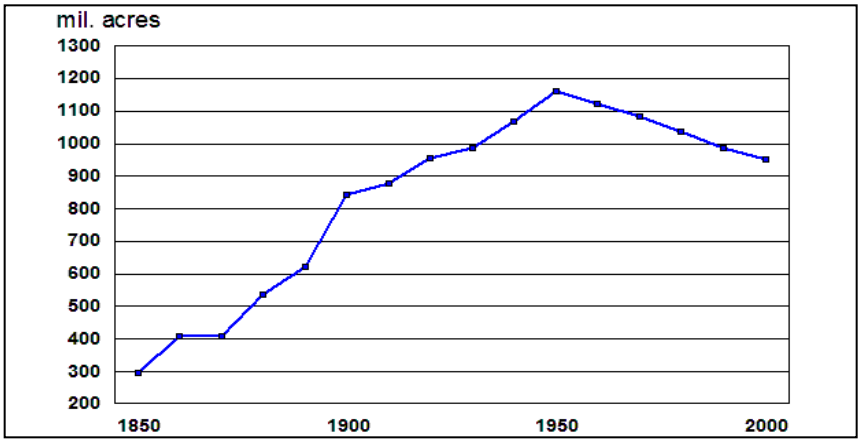
Since payments under these farm programs are linked to crop production, they tend to be highly concentrated, both regionally and among the very largest producers (see Table 1 above). This concentration is most pronounced among the traditional farm safety net programs, which are geared directly to farmers' production of the eligible crops—either current production in the case of the marketing assistance loan program and the Average Crop Revenue Election (ACRE) program, or past production for the Countercyclical Payment and Direct Payment Programs. According to data compiled by the Environmental Working Group through Freedom of Information Act requests to USDA's Farm Service Agency, the top 10 percent of recipients under the Countercyclical Payment, Direct Payment, and loan programs received 76 percent, 67 percent, and 60 percent of all payments, respectively, between 1995 and 2009. The distribution of payments provided by farm support program is skewed because the payments go almost exclusively to producers of the major row crops, which now account for less than one-third of total U.S. farm receipts. In 2007, only 9 percent of all farms generated annual sales revenue greater than $250,000, but they accounted for 57 percent of all farm support payments received. By contrast, 57 percent of all farms had $10,000 or less in sales receipts, and accounted for only 7 percent of all payments. The level of payment concentration varies a great deal more among conservation programs, ranging from a high of 74 percent for the Wetland Reserve Program to a more modest 37 percent for the Conservation Security Program.[4]

Introduction

The first agricultural legislation aimed at supporting the income of U.S. farmers was passed in the early years of the Great Depression, when crop prices were so low that some farmers chose to destroy their crops rather than deliver them to market, because the harvesting and transport costs would have exceeded the revenue farmers would net from the sale.

In many Great Plains states farmers had few crops at all, due to the multiple droughts and subsequent loss of topsoil during the Dust Bowl, a period that lasted nearly the full decade of the 1930s. Although the financial impacts of the Great Depression were felt throughout the U.S. economy, the period was particularly hurtful to U.S. farmers, who had few if any alternative ways to earn income in the countryside. In 1933 and 1934, nearly one in ten U.S. farms changed ownership, some because of foreclosures on debt and others because families abandoned their farms to migrate west. By one estimate, per-capita income for farmers was only one-third that of the rest of the U.S. population in the 1930s. Consequently, the main objective of U.S. farm policy was to raise farmers' incomes.

Figure 1 | U.S. Farmland Acreage, 1850-2000



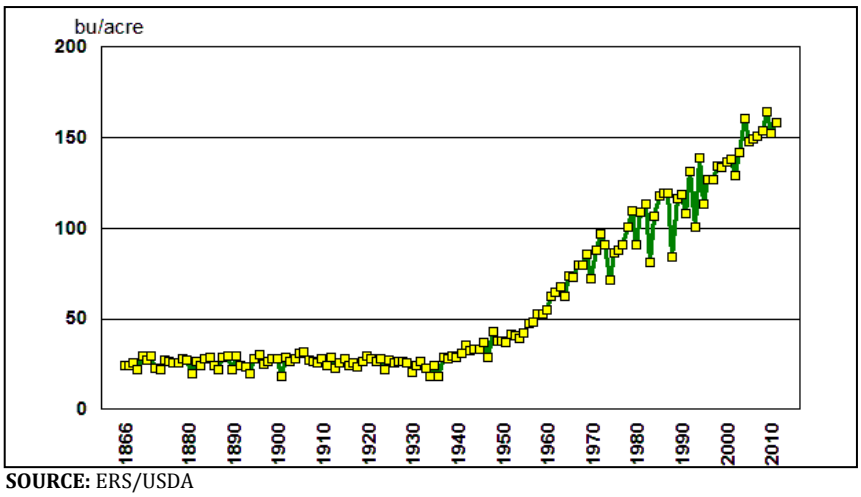
SOURCE: U.S. Census of Agriculture

Drivers of Change in U.S. Agriculture

The United States was an expanding country throughout its first full century, both in terms of opening new lands for settlement and cultivation and in its reach internationally. As seen in Figure 1, total land devoted to farming in the United States (including fallow land, pasture land, and cropland) grew continually until about 1950, although the rate of expansion fell markedly at the turn of the 20th century. (This data comes from the Census of Agriculture. The first Census of Agriculture was conducted in 1840 as part of the constitutionally mandated decennial census process; it remained part of that process through 1950, although mid-decade agriculture surveys were conducted separately in 1925, 1935, and 1945. In 1997, Congress shifted responsibility for conducting the Census of Agriculture from the Census Bureau, located in the U.S. Department of Commerce, to the National Agricultural Statistics Service inthe U.S. Department of Agriculture (USDA). The Census of Agriculture is the main source of information about long-term historical trends in U.S. agriculture.)

Policies allowing the low-cost purchase of public lands prevailed in the 19th century as the vanguard of civilization marched westward across the country. The most well-known of these policies was probably the Homestead Act of 1862, which granted 160 acres of surveyed public land for a nominal fee to persons at least 21 years of age who filed for a parcel and then built a dwelling and farmed it for a minimum of five years. Between 1862 and 1904, 80 million acres were claimed by farmers under the Homestead Act, although businesses such as mining firms, railroads, and large-scale cattle ranching enterprises claimed far more public land in the Midwest and West than was dispersed through the Homestead Act. The Act remained in effect until 1976 for most parts of the country, although its authority remained active in Alaska for another decade.

Figure 2 | U.S. Average Corn Yield, 1866-2011



SOURCE: ERS/USDA

Growth in U.S. agricultural production over the decades has also been boosted by the arrival of new technology that improved productivity. Innovations such as the cotton gin (invented in 1794), the mechanical reaper (1831), the "reefer" (a refrigerated rail car, 1851), and the steam-powered tractor (1868) helped lower the costs of producing and processing crops and livestock and getting them to market. The spread of irrigation practices in the West and the expansion of railroad systems across the country made it possible to establish farms and communities in regions that had previously been uneconomical to inhabit. In short, the 19th century marked a period of expansion in U.S. agriculture, enabled by both federal policy and advances in technology.

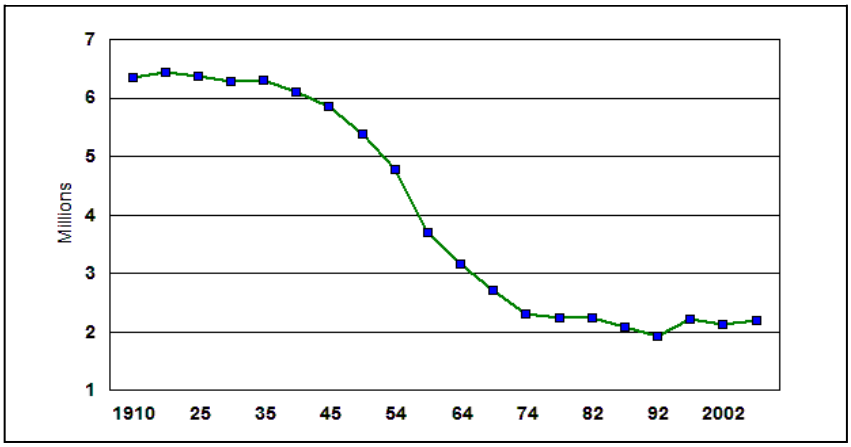
The 20th century saw the continued growth of agricultural production, due largely to increased crop yields and improved feeding practices and feed conversion for livestock, as well as the beginning of federal agricultural policy as we now know it. Although gasoline-powered tractors were first introduced late in the 19th century, their widespread adoption took several decades. Ford sold the first mass-produced tractors in 1917, and in the 1930s the horsepower capacity of tractors began to exceed that from draft animals.[5] This shift freed up about 80 million acres for row crop production that had previously been used to provide pasture and forage for draft animals.[6] The other main innovation of the 20th century was the introduction of hybrid seed varieties for many field crops, starting with the release of the first double-cross hybrid corn seed from the University of Connecticut's agricultural experiment station in 1922.[7] Adoption of this technology proceeded quickly—within seven years of its introduction, half of all U.S. corn acres were planted with hybrid varieties.[8] As a result, average U.S. corn yield jumped beginning in the 1930s, after having been fairly stagnant for most of the previous century. Average corn yield grew only 28 percent between 1866 and 1941 (for an annual growth rate of 0.3 percent), compared to more than 400 percent between 1941 and 2010 (an annual growth rate of 5.9 percent) (Figure 2). Today, most cotton, corn, and soybeans grown in the United States are not only hybrid crops, but genetically modified crops. The adoption of hybrid technology took longer for rice and wheat crops, and no genetically modified varieties of these crops have yet been approved for commercial markets. Technological developments such as these have contributed to the consolidation of ownership in production agriculture, with two-thirds of U.S. farmland now held in farm operations of 1,000 acres or more.

The Structure of U.S. Agriculture

Over the nearly 80 years that the U.S. farm safety net has been in place, the structure of the U.S. agricultural system has changed significantly. The massive technological changes described previously caused a severe decline in the number of farms in the United States—from just over 6 million at the beginning of World War II to just over 2 million in 1974, a two-thirds reduction in 35 years (Figure 3). Over the past few decades, the number of farms (as defined in the Census of Agriculture) has stabilized at around 2 million, but the aggregate numbers in this case conceal a great deal of change in the size and management structure of farming.

Beginning in 1974, the USDA established as its definition of a *farm* as "any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year." Despite periodic objections to this low threshold as to what constitutes a farm, this definition has remained unchanged since that time. According to the Census of Agriculture, between 1978 and 2007 the number of small farms (under 180 acres in size) grew from 1.3 million to 1.5 million, the number of medium-sized farms fell from 792,000 to 518,000, and the ranks of the very largest farms (over 1,000 acres) rose from 161,000 to 173,000, making the skewed farm size distribution in the United States even more pronounced. The number of farms operated by corporations or other nonfamily entities also rose between 1978 and 2007, from 59,000 to 124,000. In 2007, more than two-thirds of all farmland was made up of farms of 1,000 acres or more.

Figure 3 | Number of U.S. Farms, 1910-2007



SOURCE: Census of Agriculture

A brief history of U.S. farm programs between 1933 and 1996

The Agricultural Adjustment Act of 1933 was aimed at reducing the amount of agricultural commodities produced, by paying farmers to withhold some of their land from cultivation so as to increase the prices that would be received for the crops. Also, each farmer was given the option of receiving loans for his crops from the federal government based on the established loan rates, with the crop itself serving as collateral. At the end of the loan period, the farmer could either repay the loan or forfeit the crop to the government if prevailing crop prices had fallen below the cost of repayment.

The Soil Conservation Service was established in 1933 in the U.S. Department of the Interior to tackle problems with cultivation and soil management practices that made Midwest farms more vulnerable to the massive wind erosion that characterized the Dust Bowl years. The agency was transferred to the USDA in the Soil Conservation Act of 1935, which authorized the establishment of soil and water conservation programs. The price support and conservation programs were formally linked the following year, with the passage of the Soil Conservation and Domestic Allotment Act of 1936, which paid farmers to switch from "soil-depleting" crops to "soil-conserving" crops. (The "soil-depleting" category included all crops that were in surplus production at the time.) This step was taken in response to a Supreme Court decision in 1936, which ruled that Congress could not tax a specific group for the purpose of providing benefits to a different specific group, in order to regulate farmers' activities through economic coercion.[9]

These basic programs of support prices combined with measures to reduce supply and conserve soil were refined in the farm bills that followed. Congress tinkered with support levels (called *commodity loan rates*) for crops over the next several decades, and in 1973 added target prices for various crops. If market prices fell below established target prices, farmers would receive a payment reflecting that price gap (called a *deficiency payment*), based on their historical acres for each program crop.

In order to combat overproduction and limit program costs under the deficiency payment system, the USDA was also required by Congress to set annual, crop-specific set-aside rates for cropland. If a farmer wanted to be eligible to receive deficiency payments, he had to

idle the specified share of his acres devoted to that specific crop.

Despite this effort to control the U.S. supply of crops, the support prices established a relatively high price floor for those crops internationally, leading to an expansion in global supply that created a gap between U.S. and world prices, which made U.S. exports less competitive. This situation led to an increase in U.S. government stockholdings of these commodities due to producer forfeitures. U.S. stocks of dairy products also grew during this period, due to similar economic and policy circumstances, but with no supply-reduction restrictions in place.

The USDA sought an ad hoc fix to this problem in 1983 by offering farmers payments (in the form of crops in USDA stocks) to take land over and above the required set-aside percentage out of production. This program was called Payment in Kind, or PIK. PIK succeeded in idling additional land—20 million fewer acres were planted to corn in 1983 as compared to 1982—but it backfired when a severe drought hit the Midwest, dropping corn and soybean production by nearly half.

The 1985 Food Security Act was considered in an environment when farmland prices were dropping precipitously—total farm asset value dropped more than 20 percent between 1980 and 1985—leading thousands of farmers into foreclosure and bankruptcy.[10] The legislation began the process of lowering the various crop loan rates and target prices, as well as the dairy support price. But by that time government stocks were so massive that the legislation also gave the USDA authority to provide certificates tied to commodities in government storage to farmers (called generic certificates) in lieu of cash payments in certain circumstances. At their peak in 1986, total ending stocks of corn were 4.9 billion bushels, nearly 60 percent of that year's corn crop. More than half of those stocks were held off the market, either in government-owned stocks or diverted by farmers themselves into the Farmer-Owned Reserve.[11]

For cotton and rice, the Food Security Act converted the loan program into a marketing assistance loan program, which allowed farmers the option to collect a *loan deficiency payment* rather than forfeit their crop if the market price fell below the loan rate any time while their crop was under loan. This step was taken to promote export sales and reduce producer forfeitures to avoid the further accumulation of government stocks.

The legislation also authorized the Dairy Termination program, which paid dairy farmers to exit from milk production for the following five years. Analyses after the fact showed that older and/or less-productive farmers used the program to retire from the business, amounting to about a 10 percent reduction in the U.S. dairy herd size. Within a few years, however, other producers increased their production more than enough to offset the original reduction.[12] The legislation also terminated the government purchase component of the program as of 2000, replacing it with recourse loans under which dairy loans must be repaid and products cannot be forfeited into government stocks.

The Food, Agriculture, Conservation, and Trade Act of 1990 was notable for being the first farm bill undertaken in conjunction with Congressional budget reconciliation. One major change to farm programs it contained was to allow farmers to shift up to 15 percent of their crop acreage base for any given crop into another crop without losing program eligibility—so-called *flex acres*. For example, someone with 100 acres of corn base could plant 15 of those acres to soybeans with no effect on corn program payments. Under the budget reconciliation legislation that followed shortly, however, farmers lost payments for those flex acres. This system of paying on only 85 percent of eligible acres, regardless of what crops are planted on the land, has remained as part of the formula for the income support programs currently in use.

The Federal Agriculture Improvement and Reform Act of 1996 (FAIR Act) marked a significant turning point in the U.S. approach to farm policy. Undertaken in a period of high commodity prices and significant federal budget pressures, Congress eliminated the system of target

prices and deficiency payments linked to shifts in market prices and also ended efforts to control supply through annual acreage-reduction requirements. In their place, they established direct, decoupled payments to farmers based on their historical crop production, which would be paid regardless of what crops the farmers planted or of the market price environment. The marketing assistance loan program was retained, but with the high prices prevailing at the time the bill was enacted, the program was not expected to pay out substantial amounts.

Commodities covered under traditional farm safety net programs

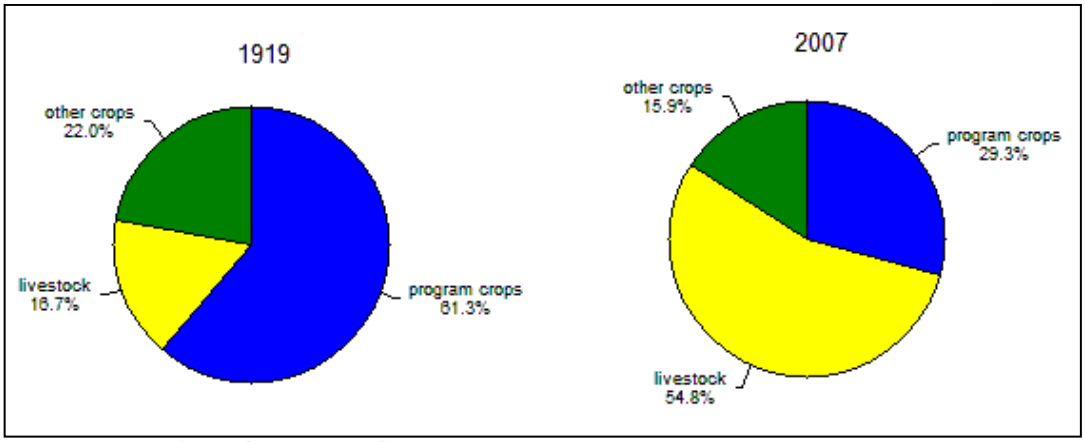
The "basic agricultural commodities" covered under farm programs from the beginning were corn, cotton, wheat, tobacco, peanuts, and rice. The Agriculture Act of 1949, now installed as one of two major pieces of "permanent" farm legislation, also established a price support program for dairy. At the time this legislation was promulgated, the crops on this list (now known as *program crops*) were grown by more than 75 percent of all farmers. Most farmers also raised one or more species of livestock, with pasture and farm-raised grain and forage serving as the main source of animal feed. In recent decades, farming has become a much more specialized occupation. In 1900, most farms planted at least five crops and raised livestock as well; the average farm today specializes in either crop or livestock production.[13] In fact, many farms now specialize in livestock production, with most crops grown on those farms designated for on-farm feeding, silage, or forage.

Over time, the range of crops grown by U.S. farmers has also become more diverse. Oilseeds such as soybeans and sunflowers became common cultivars in the 1940s and 1950s after technology was developed to efficiently separate the meal and oil contained in the harvested seed for animal feed and human consumption respectively. Soybeans and minor oilseeds, which were never classified as specialty crops, were added as "loan-eligible" commodities in 1976 and given equal status as a program crop in the 2002 farm bill.

Farmers' ability to plant horticultural crops in different regions in the country expanded as technological advances made irrigated production more feasible, especially when combined with low-cost water provided through the establishment of federal water projects in the Western United States beginning in the 1920s. In 1948, California, with its focus on specialty crop production, took the lead in the country as the top farm state in terms of value of production, a position it has never relinquished.

Aside from the pulse crops (dry peas, lentils, and chickpeas), no group representing producers of specialty crops has ever sought to be added to the traditional income/price support portion of the farm safety net program. Producers of pulse crops, grown primarily in the northern Great Plains, sought program crop status because they had a difficult time competing with incentives offered to program crops such as wheat, barley, and minor oilseeds, which are also grown in that

Figure 4 | Value of U.S. Agricultural Production by Product Category, 1919 vs. 2007



SOURCE: Census of Agriculture, 1920 and 2007

region. They received status as a loan-eligible crop in the 2002 farm bill, and became eligible for other types of payments in the 2008 farm bill. Among livestock producers, only dairy farmers receive income/price support comparable in scope to that enjoyed by program crop producers. Even though row crops now account for only 30 percent of the total value of U.S. agricultural production, producers of these crops (plus dairy) remain the sole beneficiaries of the program array known popularly as the *farm safety net* (Figure 4). This is due largely to legislative inertia and interest groups fighting to maintain the current policy approach.

The Current U.S. Farm Safety Net

With few exceptions, U.S. farm policy tends to be accretive, with Congress typically choosing to modify existing programs and/or add new programs on top of existing programs rather than subtract programs from the mix. For example, a few years after the 1996 FAIR Act became law, a severe economic slowdown occurred in Asia, which led to a decline in demand from that region for U.S. agricultural exports. As a result, crop prices dropped severely—the average annual corn price dropped more than 50 percent between 1995/1996 and 1999/2000—putting a significant dent in the revenue farmers were able to earn from the market. But rather than reverse their 1996 decision to move from coupled payments to decoupled payments, Congress simply provided additional ad hoc payments to farmers each year between 1998 and 2001 (totaling more than $19 billion for the period), terming the new program *market loss assistance payments*. Those ad hoc payments were turned into a new element of the farm safety net in the 2002 farm bill, in the form of a price-based countercyclical payment (CCP) program. The existing elements of the farm safety net remained intact. Similarly, an effort on the part of the National Corn Growers Association to replace that CCP program with a revenue-based program in the 2008 farm bill was turned back, and the new revenue program was instead offered as an alternative to the CCP for farmers as yet another addition to the farm safety net. In the entire 2008 farm bill, only 24 individual provisions, authorities, or programs were formally repealed (out of a 663-page bill), and none of those repeals affected fundamental components of the farm safety net.

In the effort to add new programs in the farm bill process, the rule of thumb is that the bigger a new program is, the wider the base of support among farm stakeholder groups and members of Congress must be. It is relatively unusual for a large program to be incorporated at the behest of a single interest group backed by few members of Congress, but a program backed by an Agriculture Committee chairman or a member of the overall Congressional leadership can sometimes prevail because of their influence over the process.

The following sections of this paper include brief descriptions and histories of each individual program that makes up the current farm safety net, including recent aggregate payment levels under the program (when relevant) and which segment of the farmer population receives the payments. Nearly all of the programs described, with the exception of most of the farm credit programs and a few conservation programs, are funded on a mandatory basis, primarily through the Commodity Credit Corporation (CCC).[14] The CCC is run by a board consisting of Senate-confirmed officials of the U.S. Department of Agriculture and other senior departmental officials. The federal crop insurance program and the standing agricultural disaster programs also receive mandatory funding, but through mechanisms other than the CCC. Unless otherwise noted, all figures relating to program participation and costs cited in this paper are from USDA sources, Congressional Budget Office scores, or legislative provisions.

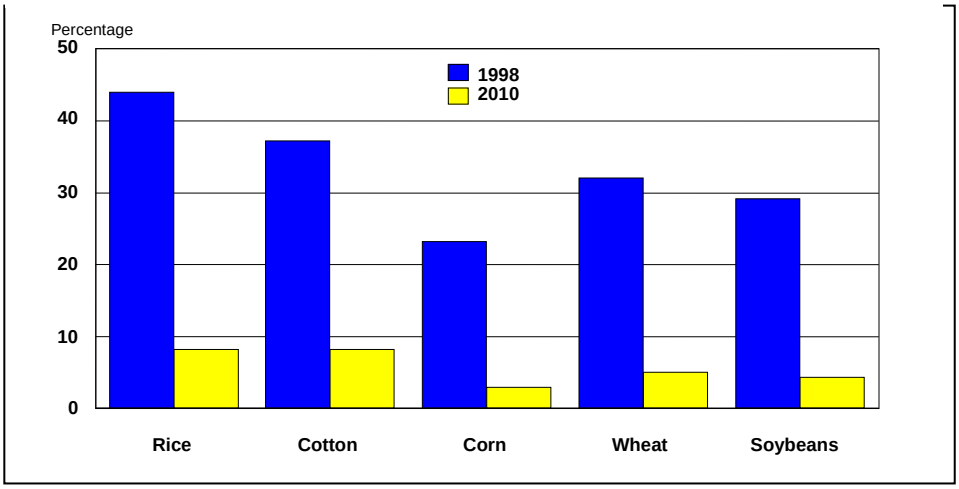
Income and Price Support Programs Linked to Commodity Production

All program crops

Congress has typically sought to maintain a consistent program structure for all program crops, with the current main elements being a nonrecourse marketing assistance loan program, a countercyclical payment program (either price-based or revenue-based), and a direct payment program. The loan program described in

this section uses the farmers' crops as the collateral for the short-term loan, while farm loans described in a later section are longer-term and use the farmer's capital assets (land and buildings) as collateral. The statutory structure allows some details within each component to differ between crops, such as how the market price setting the repayment rate for the loan program is determined. These differences can be amplified depending on how the USDA's Farm Service Agency (FSA), which oversees the main commodity programs, crafts the rules and regulations to operate the programs. (The FSA has offices in almost every county in the country, 2,248 county service centers plus state headquarters offices in the 50 states plus Puerto Rico.) However, the U.S. government's commitment to modify the programs that support cotton producers—a commitment that is necessary to bring the United States into compliance with the findings of the dispute settlement process in a case under the World Trade Organization (WTO) originally brought by the government of Brazil back in 2003—will represent a severe test of policymakers' historical preference for consistent farm program structure.

Figure 5 | Share of Government Payments in Revenue per Acre, 1998 and 2010



SOURCE: USDA/ERS cost of production and program data

The importance of government payments varies considerably among the major crops covered by the program, although the payment share of crop revenue has dropped considerably across the board as the result of higher crop prices in the last few years. In 1998—the peak year for total farm program spending—farm program payments accounted for 30 percent or more of total receipts per acre for three main crops (rice, cotton, and wheat) and close to that level for soybeans (Figure 5). The relative shares declined across the board as of the 2010 crop year, but rice, cotton, and wheat remained the highest.

Nonrecourse Marketing Assistance Loan Program – This loan program was originally designed to assist farmers with their cash flow and marketing decisions, giving them an opportunity to hold off on marketing their crops immediately after harvest. During the 1980s, persistent low prices led to an accumulation of government stocks of harvested crops, as farmers chose to forfeit their commodities rather than repay the loan at the end of the typically nine-month period—a benefit known as a *marketing loan gain*. The program was changed to allow rice and cotton farmers facing persistent low prices to request a cash payment for the difference between the loan rate and the market price, rather than forfeit their collateral. This payment is known as a *loan deficiency payment*, or LDP. This option was added for producers of other program crops in the 1990 farm bill.

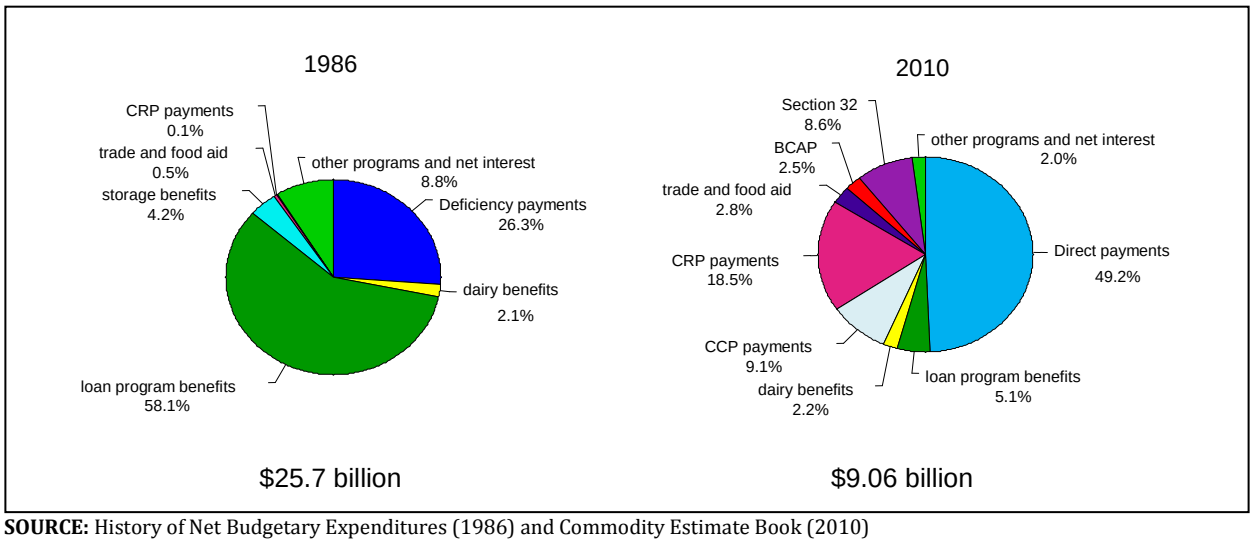
Although loan rates were initially set at a share of the five-year moving average price for each crop, they were fixed in law beginning with the 2002 farm bill. All production of loan-eligible crops can be placed under loan for this program, regardless of a farmer's eligibility for other farm support programs. In the same farm bill, farmers who grazed out cropland (a common practice for wheat fields in the Southern Great Plains) rather than harvesting it for market, were also made eligible to collect LDPs on that crop.

This program, while available to all producers of row crops and other commodities such as honey, wool, and mohair, has nonetheless been a particular focus for rice and cotton producers, who have essentially embedded its use into their crop marketing strategies through widespread participation in marketing cooperatives. Those farmers sign over their rights to the program to the cooperative, which can then take out loans or collect LDP's on behalf of its members in a way to maximize their returns. During the program's zenith between 1998 and 2005, cotton and rice accounted for only 5 percent of the principal crop acreage harvested in the United States, but cotton and rice farmers collected 40 percent of all benefits paid out under this program.

Overall, farmers have collected nearly $48 billion in benefits under this program since it became available in its current form in 1985 for rice and cotton, with its peak at more than $8 billion in 2001 alone. According to data on the Environmental Working Group website, the top 10 percent of recipients accounted for 60 percent of marketing loan gains paid out between 1995 and 2009. Past efforts to limit payments under this program to wealthier farmers have been largely ineffective, because farmers still retained the right to forfeit their collateral if they hit payment limits. In order to meet the policy objective of minimizing the forfeiture of commodities into government stocks, the USDA offered farmers a chance to capture the benefits in the form of commodity certificates, which were not covered by the payment limitation rules. The participation of marketing cooperatives in the rice and cotton markets, which obscured how benefits accrued to individual members, also hampered enforcement. In the 2008 farm bill, rather than try to tighten the rules, Congress chose to remove all limitations affecting benefits under the marketing assistance loan program. With the increased commodity prices in recent years, relatively few payments have been made under this program (payments averaged only $300 million over 2007–2010), so this change is not likely to have much of an effect for now. The share of overall benefits to producers derived from this program has fallen from a high of 50 percent in 1986 to only 5 percent in 2010 (Figure 6).

The Countercyclical Payment Program – The CCP program was added in the 2002 farm bill as a statutory replacement for the ad hoc *market loss assistance payments* provided by Congress in discrete legislation passed each year between 1998 and 2001. The CCP program was intended to serve the same niche in the farm safety net as the target price/deficiency payment program that had been abandoned in the 1996 farm bill, but without the supply reduction and base acreage planting requirements that farmers disliked about the earlier program. Target prices in the CCP

Figure 6 | CCC Net Budgetary Expenditures, 1986 and 2010



SOURCE: History of Net Budgetary Expenditures (1986) and Commodity Estimate Book (2010)

program are established statutorily for each program crop, and payments are made to farmers holding base acres if market prices fall below those levels. Unlike the marketing loan program, payments aremade on a fixed amount of production for each eligible farmer, determined by the crops each farmer grew and the yields realized for those crops during a historical period. Farmers also are not required to actually grow the crop for which the payments are made in a given crop year.

Target prices for the CCP program were set by Congress with political and budgetary considerations in mind, and did not necessarily reflect the prevailing market prices for the various program crops at the time the law was enacted. Between the 2002 and 2010 crop years, about $14.8 billion was paid out under this program, and more than 85 percent of the total was paid to producers of two crops—upland cotton and corn. Corn producers received significant payments in only two of the nine years, while the program paid out relatively steadily for cotton producers through the 2008 crop year. Producers of four crops, including two of the largest by acreage planted (wheat and soybeans) have received no net CCPs under the program. As is the case with most commodity programs, payments under the CCP program are heavily concentrated—over the program's lifetime, the top 10 percent of recipients have collected 76 percent of all payments.[15] And because of the uneven payment distribution between crops, the payments have been concentrated in those states where corn and cotton production are most common—in the Midwest for corn, and in Southern states and California for cotton.

Average Crop Revenue Election Program –

The newest program in the price and income support category, the Average Crop Revenue Election (ACRE) program, was established in the 2008 farm bill as a revenue-based option for farmers to choose in place of the price-based CCP program described above. The proposal for ACRE was put forward in 2007 by the National Corn Growers Association (NCGA), which maintained that in the new market environment in which renewable fuels production accounts for a significant share of demand for corn and soybeans, spurring higher prices and production costs, the fixed target prices established for the CCP only five years earlier no longer provided an adequate safety net. They also asserted that the CCP program fails to address income problems that occur when prices rise in response to a production shortfall. The NCGA's arguments were rejected by groups representing most other program crops, and the compromise reached at the end of the debate was to leave the CCP in place but offer farmers the option to choose ACRE instead.

The ACRE program makes payments based on a per-acre revenue guarantee for program crops determined by a two-year national average price and the five-year moving average state yield. If the estimated state average revenue for the crop falls below 90 percent of the guarantee in a given crop year, the farmer may receive an ACRE payment if he or she can demonstrate a loss in revenue on the farm, net of crop insurance premiums paid by the farmer for that particular crop. Farmers have a chance prior to each crop year to decide if they want to sign up any or all of their farms for ACRE, but once a given farm is enrolled in ACRE, it must remain in the program for all program crops through the end of the 2008 farm bill in 2012. In enrolling in ACRE, farmers also agree to give up 20 percent of the direct payment they would otherwise have received if they had stayed in the traditional program, and also accept a 30 percent reduction in the loan rate for program crops. ACRE payments are made on actual acres planted, not on a historical base as is the case for the CCPprogram.

Because of ACRE's complexity and the need for farmers to surrender a portion of their direct payment to sign up, only about 13 percent of all base acres have been enrolled in the ACRE program through the 2010 crop year, almost exclusively by corn, wheat, and soybean producers. About $450 million was paid out under the program for the 2009 crop year, primarily to wheat producers in states such as Oklahoma, Texas, and Washington. Payments for the 2010 crop year, if any, are due to be made early in fiscal year (FY) 2012.

WTO issues across program categories

As reported by the U.S. government to the WTO, payments under the marketing assistance loan program are deemed to be "amber box," which is the category for the most trade-distorting domestic support programs that are subject to limitation. The dairy and sugar price support programs are also reported as amber box. The CCP program and the Milk Income Loss Contract have been reported in the amber box "non-product-specific de minimis" category, because they are decoupled from current production. While the ACRE program has not yet been notified since the first payments were made in late 2010, it is anticipated that it will be reported as an amber box program as well. Under current WTO rules, as established in the Uruguay Round Agreement on Agriculture (URAA), WTO members that are developed countries must limit spending on amber box programs and can spend no more than 5 percent of the value of total agricultural production on the de minimis programs.

A second category, called "blue box," includes those programs linked to supply-reduction requirements. Countries' spending on these programs are not limited, though the United States currently has no programs in this category. The final category, called "green box," includes those programs deemed to be no more than minimally trade-distorting. For the United States, this includes programs such as the direct payment program and conservation programs that will be discussed later in this paper.

Under the current set of rules established under the URAA, U.S. programs are very unlikely to breach any of the amber box limits. If the reduced levels laid out in the current draft of the agricultural text in the Doha Round of negotiations were to be adopted, significant changes would have to be made to U.S. domestic support programs in order to come into compliance.

Dairy programs

Dairy Product Price Support Program – This program has been a part of the farm safety net since the very beginning; the Agricultural Adjustment Act of 1933 authorized the Secretary of Agriculture to support the price of milk by government purchase. The Dairy Price Support Program was formally established in the Agriculture Act of 1949. At the program's peak in 1983, the USDA purchased nearly 17 million pounds of dairy products to be held in government stocks, amounting to 12 percent of total marketings in that year. With the milk support price fixed as of 1996 at $9.90/cwt (with no adjustment for inflation), this program is now a mere shadow of its former self.[16]

As now operated, the government can purchase eligible products (butter, cheese, and nonfat dry milk powder), that meet specifications, at fixed product prices based on the support price that meet specifications. According to written testimony submitted to the House Agriculture Committee in July 2009, the USDA had purchased 272 million pounds of nonfat dry milk and 4.6 million pounds of butter over the previous nine months to support prices. Those products were further processed for distribution or bartered for other products that were used in programs such as the School Lunch Program and the Emergency Food Assistance Program, which distributes food to states for use in food banks, soup kitchens, and similar facilities for the unemployed and homeless. As with grain and oilseeds, no dairy products are currently held in USDA stocks.

Milk Marketing Order System – This component of the dairy safety net has been around almost as long as the price component described above; it was established in law by the Agricultural Marketing Agreement Act of 1937. Designed to encourage orderly market conditions for both producers and consumers, this program segments milk prices by the final use of the product, with the highest price reserved for human fluid milk consumption (so-called Class I milk) and the lowest price typically for milk used for producing butter or any milk in dried form (Class IV milk). These prices are calculated from a Basic Formula Price derived from market prices in the upper Midwest.

Under some regional arrangements (called orders), processors are required to pay at least a minimum price at each class, even though there is not necessarily any intrinsic difference in the quality of milk used for each

class. Most producers belong to cooperatives that collect and market their milk; the producers are paid through a pooled revenue scheme on the basis of a "blend" price, which reflects the weighted price for milk used in each class. Cooperatives are granted more flexibility in pricing than private entities.

Prior to the 1996 FAIR Act, there were 31 distinct milk marketing orders, some covering as few as one or two states. There are now just ten federal milk marketing orders, which cover about 60 percent of all milk marketed in the United States. Most of the rest of the country is covered by state milk marketing orders, the biggest of which is in California, accounting for another 20 percent of total milk marketed. The largest of the federal order regions is the Central Order area, which covers some or all of eight states in the Midwest. The milk marketing order system is overseen at the federal level by the USDA's Agricultural Marketing Service.

Milk Income Loss Contract Program – If the dairy price support program is the dairy analog of the marketing loan program for program crops, the Milk Income Loss Contract (MILC) is the analog to the CCP program. The MILC program was established in the 2002 farm bill and provides a payment to dairy producers if the Class I price for the Northeast Milk Marketing Order falls below $16.94/cwt, adjusted to reflect changes in dairy feed costs. The payment made is 45 percent of the monthly gap between the two levels, and it is paid on the first 2.985 million pounds of milk marketed for a single operation in a given year. These levels are in place through August 2012, and revert to 34 percent and 2.4 million pounds respectively in September 2012. The program has paid out about $3.7 billion over its lifetime, through the end of FY 2010.

The cap on the amount of milk eligible for payments under MILC covers full production for a farm that has about 160 actively producing dairy cows. Farms above that size can receive up to the capped amount, but nothing more. While all U.S. farmers are eligible for the program, the strikingly different farm size distribution across the various regions of the country means that this program is strongly supported by dairy farmers in the Northeast and Midwest, who tend to have smaller operations, and strongly opposed by their counterparts in the West, who have much bigger farms. The 2007 Census of Agriculture, for example, reported that the average dairy farm in California had 850 cows, while the average Vermont operation had 115 cows. This regional divide has been reflected in Congressional debates on dairy policy for several decades.

Over the past few years, the U.S. dairy industry has suffered through a very rough period economically, as the combination of declining demand for dairy products (resulting from the 2007–2009 recession), especially in overseas markets, as well as persistently high feed prices, has had most farmers operating at a loss, regardless of farm size. The National Milk Producers Federation estimated that, over a five-month period in early 2009, U.S. dairy producers lost $3.9 billion in equity in their operations. The FY 2010 agricultural appropriations bill included a $350 million package to assist dairy producers through this crisis, including $60 million designated for the government to buy cheese and other dairy products. Dairy prices have recovered somewhat, with the all-milk price for 2011 projected by the USDA at more than $20/cwt, a 59 percent increase over the 2009 average. Nonetheless, this episode has prompted many dairy organizations to call for significant changes to U.S. dairy policy in the upcoming farm bill, including a system that would have responded better to the recent crisis than what has beenin place.

Sugar programs

U.S. sugar producers have received income protection from the U.S. government almost continually since 1934. At that time Congress passed the Sugar Act, which established a system of domestic and international quotas for sugar destined for consumption in the United States; it also provided payments to sugar farmers to encourage them to limit their production to fit within the quota allocations. Sugar is produced in the United States from two crops—sugar cane, now grown in four states and Puerto Rico, and sugar beets, grown in 11 states. Since the refined sugar produced from both crops is chemically indistinguishable, the program structure is nearly identical for both. The main difference is that the

loan rate (for the 2011 crop year) is established for the raw crop for sugar cane at $0.1875/lb., but at $0.2409/lb. for the refined product for sugar beets, because of differences in how the two crops are processed. Most sugar processing capacity in the country is owned by the producers through cooperatives.

A 2001 study by John Beghin et al. found that removal of all components of the U.S. sugar program would save sweetener users $1.9 billion annually (in 1999 prices), though that study did not attempt to determine the likely distribution of the savings between food processors and food consumers.[17] In the current tight world sugar market, with historically high prices and a relatively small gap between prevailing world and U.S. prices, the potential for consumer gain from eliminating the sugar program would be considerably reduced.

Sugar Loan Program – Commodity loans have been explicitly available to processors of sugar beets and sugar cane as a named "non-basic commodity" since the Agriculture and Food Act of 1981, although the Secretary previously had discretion to treat sugar as such under his own authority under the Agriculture Act of 1949. Since the raw commodity (both sugar beets and sugar cane) is perishable and not amenable to long-term storage, it is processed or semi-processed sugar that is eligible for the loan program. Those entities holding the loans are allowed to forfeit the product to the government if prices fall below loan rates. Between 1996 and 2002, a $0.01/lb. "forfeiture penalty" was assessed to discourage such actions.

Unless widespread forfeitures occur, this program generally operates without cost to U.S. taxpayers, as the protection is provided to the industry in the form of higher consumer prices rather than government payments. Although the aggregate estimated cost to consumers of this program is large, most sugar is consumed within processed food products, and individuals are rarely aware of the relatively high cost they pay for that ingredient as compared to prevailing world sugar prices.

Marketing Allotments – This portion of the sugar program divides up the allowable share of domestic sugar beet and sugar cane production between processors of those two crops, on a state-by-state basis, based on production during a previous historical period. Most of the provisions establishing the current marketing allotment system were contained in the 2002 farm bill. The allocation process is intended to ensure that no sugar under loan will be forfeited to the USDA. By law, sugar beet processors receive 54.35 percent of the allotments, while sugar cane processors receive the remainder. All U.S. sugar beet and sugar cane production occurs under contract with processors, and any production that exceeds the overall allotment quantity cannot be marketed in the United States, subject to civil penalties. There are provisions for revising the allotment quantity within a crop year if the USDA finds changes in market conditions in the course of the year, and for reallocating allotments among processors between years if any processor firms go out of or enter the business.

Flexible Feedstock Program – Over the last few decades, the U.S. sugar industry has seen its border protection begin to erode, first due to the establishment of a global tariff rate quota system for sugar imports under the URAA in 1994, and then due to increased access for imports under various free trade agreements. Rather than give up the current program structure, or accept shrinking domestic marketing allotments to maintain support levels without excessive forfeitures, the industry sought a separate outlet that could utilize surplus sugar without affecting the U.S. sweetener market. The feedstock flexibility program, added in the 2008 farm bill, is intended to allow the USDA to take excess sugar off the market and sell it to bioenergy producers for the purpose of producing ethanol or other biofuels. Since corn starch, which is currently the main feedstock for ethanol, is converted into sugar before being made into ethanol, refined sugar can be used for the same purpose in relatively modest amounts per batch. However, increased sugar consumption due to a switch by some consumers away from high-fructose corn syrup, as well as reductions in domestic sugar production due to weather, has eased this concern, and

the flexible feedstock program has not yet been implemented.

Other commodity-specific programs

Cotton And Peanut Storage Payment Programs – Unlike producers of other program crops, producers of upland cotton and peanuts have been able to get their storage costs covered as part of the federal marketing assistance loan program. Groups representing these producers have thus far been able to convince Congress that crop storage is so fundamentally woven into their marketing arrangements with ginners and processors that to drop the storage payment portion of the program would harm them financially. Combined, these two programs were projected to cost $82 million over the life of the 2008 farm bill, through FY 2012. President Obama proposed ending these payments in his FY 2010 budget proposal and in subsequent years, but Congress has not agreed to cut the program.

Economic Adjustment Assistance for Upland Cotton Users – One of the impacts of globalization on the U.S. agricultural sector has been the long-term decline of the U.S. textile industry, as textile and apparel manufacturing facilities have increasingly taken advantage of lower labor costs outside of the United States (especially in Asia). This shift in locus of production, as well as the greater availability of man-made fibers such as polyester and nylon, has reduced domestic consumption of cotton significantly. Since peaking at 11.3 million bales in 1997, domestic mill use of cotton declined nearly 70 percent through 2010, although it has stabilized in recent years.

An earlier program, called Cotton Step 2, provided a reduced cotton price to domestic users of U.S. cotton, but this program was found to be an import substitution program and thus inconsistent with WTO rules as part of the 2003 Brazil cotton case. It was repealed by Congress effective August 2006.[18] At the urging of the U.S. cotton industry, Congress established a new program in its place in the 2008 farm bill providing economic adjustment assistance for upland cotton user. This program provides up to $0.04/lb. per pound of upland cotton purchased as assistance for U.S. textile firms to help them upgrade their equipment, facilities, and so forth, to help them better compete internationally.[19] In FY 2010, 56 U.S. firms or entities received payments under this program. About $75 million has been distributed annually under this program since it was established.

Hard White Wheat Development Program – U.S. wheat producers have traditionally planted five major classes of wheat—hard red winter, soft red winter, hard red spring, durum, and soft white—which meet a range of demand for wheat-based products around the world. The appellation of "hard" versus "soft"relates to the average protein content in the class of wheat—soft wheat varieties generally have protein content of 10 percent or less, while hard wheat varieties typically have 12 percent and higher, although the protein content can also vary depending on growing conditions. In recent years, markets have emerged in the United States and Asia for a class of white wheat with higher protein content (i.e., a hard white wheat), for producing whole-grain noodles and other products. U.S. farmers interested in trying to meet that demand have sought assistance from the USDA to help spur production.

In the 2002 farm bill, Congress instructed the Secretary of Agriculture to make available $20 million in mandatory funds to provide incentive payments over the 2003–2005 crop years to farmers growing hard white wheat. In this program, as implemented by the USDA, farmers could receive a $2/acre incentive for planting certified hard white wheat seed on up to 2 million acres cumulatively, and also $0.20/bushel for actually producing hard white wheat.

A similar program was included in the 2008 farm bill. However, this version did not receive mandatory funds and instead was subject to annual appropriations. No funds have been appropriated for this program yet under the 2008 farm bill authorization, through FY 2010. Official USDA statistics do not separate out soft white and hard white wheat planted area, but industry analysts believe that hard white wheat accounted for about 1 percent of total U.S. production in 2010. A 2004

report of the USDA's Economic Research Service indicated that hard white wheat plantings peaked in 2003 at about 900,000 acres, mainly in Kansas, Colorado, and California.[20]

Durum Wheat Quality Program – U.S. producers of durum wheat, a class of wheat generally used to produce pasta and couscous, have faced significant problems in recent years from a fungal disease called Fusarium head blight, or wheat scab. One analysis found that the disease was responsible for about $2 billion in losses to durum producers during the 1990s.[21] Intense research is underway to develop durum varieties more resistant to this disease, but groups representing durum producers have also sought help in covering the costs of combating the disease. In the 2008 farm bill, a program was included that would compensate durum producers for up to half of the cost of the fungicide they apply for this purpose. This program is subject to annual appropriations, and it received $3 million in the FY 2010 agricultural appropriations bill. About 90 percent of all durum wheat grown in the United States is produced in two states: North Dakota and Montana.

Incentive Payments for Covered Oilseed Producers – Spurred by strong medical evidence of the connection between heart disease and the consumption of unsaturated fats with trans isomers (known as *trans fats*), a number of government rules (generally taking the form of labeling requirements or restrictions on use) have emerged in recent years that attempt to limit the use of trans fats in the processed foods available to U.S. consumers. Trans fats are basically animal fats or partially hydrogenated vegetable oils that are solids at room temperature. The cheapest replacements for trans fats in U.S. food processing are palm oil or palm kernel oil imported from Southeast Asia. However, a 2003 meta-analysis of clinical health studies indicated that such oils tend to increase the ratio of total cholesterol compared to good cholesterol more than other saturated fats.[22] To spur the greater availability of alternatives to palm oil as affordable replacements for trans fats, the American Soybean Association collaborated with the American Heart Association to seek a program in the 2008 farm bill to encourage the production of oilseeds with traits that enhance human health, such as low-linoleic-acid soybeans. (This soybean variety was developed through research funded by soybean check-off dollars and the USDA's Agricultural Research Service beginning in the 1980s; they were first commercialized in 2004.) The program to provide incentive payments to producers of such specialized oilseeds was included in the 2008 farm bill, but it was subject to annual appropriations. No funding has been provided as of FY 2010.

Decoupled Income Support (Direct Payment Program)

This program, which was established in the 1996 FAIR Act, was designed to be fully decoupled from farmers' production decisions, in order to meet the criteria for being placed in the "green box" category of domestic supports under the URAA. It was seen as a replacement for the deficiency payment/target price system, in large part because the prospect for high crop prices over the next few years led to expectations that few payments would be made under the old system.

Because the 1996 farm bill was written in accordance with provisions of the FY 1995 budget resolution, the Agriculture Committees were able to take advantage of a somewhat out-of-date baseline crafted in 1995 that still projected that some farm program payments would be made over the ensuing ten years. The Committees were able to capture the funds reflected in that baseline and transform them into a new decoupled payment program that was sold to many on the expectation that it would be transitional. Indeed, many observers had the mistaken assumption that it would be phased out at some point. The formal name of the commodity title in the legislation was the Agricultural Markets Transition Act (AMTA), a name that the USDA at one point informally attached to the new payment program that resulted. The USDA's FSA is charged with delivering this program to farmers.

Unlike the farm safety net programs described above, payments under this program are designed to be made regardless of the prevailing price environment, and are

based on historical acres planted and historical yields (an average of the 1981–1985 period). As part of adding soybeans and minor oilseeds to program crops in the 2002 farm bill (discussed below), farmers were allowed to update their base acreage composition to reflect those additions, but yields were not updated. Under this program, farmers are also not required to plant the crop on which the payment was made—in fact, they face no planting requirement whatsoever, although they are barred from planting fruits and vegetables on those acres. In crafting the 1996 farm bill, available funds were divided up on a crop-by-crop basis, more or less reflecting the composition of payments from the recent past, then per-acre payment rates were calculated based on that funding distribution. The highest per-acre payment rates were received by rice and cotton producers (an average of $96/acre and $34/acre, respectively) and the lowest by barley and oats producers ($9.70/acre and $0.97/acre, respectively). The rationale offered was that rice and cotton producers, facing higher production costs per acre, needed a higher direct payment rate to help cover those costs. But in fact the allocation decision was largely political.

As part of the 2002 farm bill, soybeans, minor oilseeds, and peanuts were added to the direct payment system (and also made eligible for countercyclical payments). The addition of peanuts occurred as a result of the buying-out of the previous peanut program, which had relied on supply control to support prices through the use of historical acreage allotment in peanut-producing states. These acreage allotments had taken on tangible value since they were transferable in some states. Peanut producers sought the change because, with the new tariff system under the WTO, they could no longer be protected against the impact of increasing peanut imports. Soybeans and minor oilseeds were added to the program after it was recognized that the high soybean loan rate established in the 1996 farm bill relative to loan rates for competing crops was skewing farmers' planting decisions. Consequently, the soybean loan rate was reduced, and soybean producers were admitted into the direct and countercyclical payment programs as compensation. Because of the close interaction between corn and soybean cultivation in Midwest states, farmers were granted the opportunity to reclassify some of their corn acres as soybean acres under the direct payment program, or simply add soybean acres when they could demonstrate a planting history of that crop.

The direct payment program is expected to pay out about $4.9 billion in FY 2011, a slight reduction from earlier years due to modest enrollment in the ACRE program, which requires participants to give up a portion of their direct payments. Even though the highest per-acre payment rates are allocated to crops grown primarily in the South (rice, cotton, and peanuts), total dollars paid out to producers of corn, wheat, and soybeans actually dominate, because far more acres were planted to those crops during the historical period from which base acres are determined. Consequently, the top five states in terms of total direct payments received are Iowa, Texas, Illinois, Nebraska, and Kansas, all of which fall in the Midwest corn/soybean/wheat belt except for Texas. According to the farm subsidy database maintained by the Environmental Working Group, 1.6 million individuals or entities received direct payments at some point between 1995 and 2009, and the top 10 percent of recipients accounted for 67 percent of those payments.

The decoupled nature of this program makes it attractive from a trade policy viewpoint, because it is not supposed to distort farmers' production decisions. However, that same feature makes it difficult to sell to the U.S. public.[23] If the public policy justification for the farm safety net is its ability to protect farmers against swings in price and income, this program does not appear to fit within that framework, because it is designed to pay out even in an environment of high prices and high farm income, such as prevails today. The USDA projects that net farm income for 2011 will be $94.7 billion, the second-highest level in the past 35 years when adjusted for inflation.[24] Although the direct payment program is highly prized by most U.S. crop producer groups, they also recognize that it is likely to be vulnerable to at least some reductions in the upcoming farm bill debate, for this reason.

Agricultural Disaster Assistance Programs

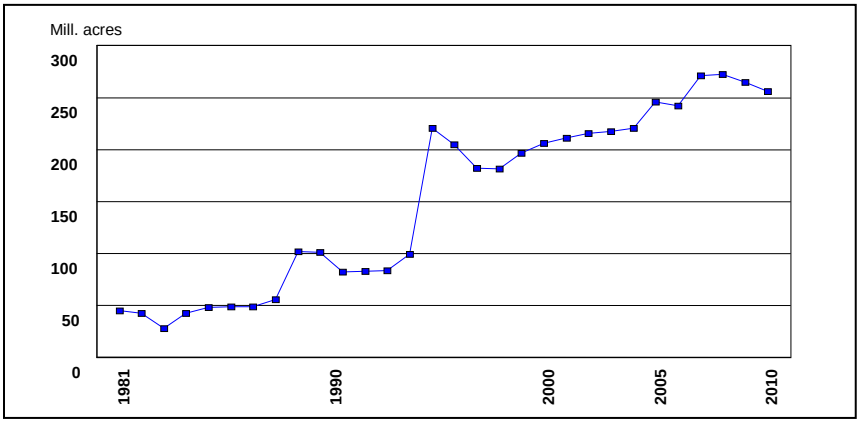
In addition to programs intended to support farmers' incomes or (in the case of dairy and sugar) commodity prices, the U.S. government has a separate array of programs intended to help farmers cope with losses occurring as a result of natural disasters. As with the commodity programs described above, the process of developing agricultural disaster assistance programs has been one of accretion, with programs being added over time to address perceived gaps in coverage, with few, if any, being eliminated. Almost every new disaster-assistance program over the last few decades has been established with the goal of ending the use of ad hoc programs passed by Congress to satisfy the demands of constituent groups that have recently faced a serious natural disaster. But through FY 2010, that goal had not been met.

Federal crop insurance

The federal crop insurance program has been around since 1938; it was created in response to crop losses in the Plains states during the Dust Bowl. For several decades the program covered only major crops in limited regions, but it was expanded in 1981 after passage of the Federal Crop Insurance Act of 1980, which was intended to be a universally available program. Federal crop insurance is fairly unique among components of the U.S. farm safety net in that it requires farmers to cover a portion of the cost of their participation by paying a premium for their insurance coverage (though that premium is subsidized), and in that it is required by law to be operated on an actuarially sound basis—i.e., expected indemnities must equal total premiums paid each year. The program has been delivered by private companies since 1981; these companies are reimbursed for their operating expenses by the USDA and also benefit from net underwriting gains generated by the program.[25] Underwriting gains are realized when the value of premiums collected on policies that do not result in losses exceeds the cost of paying off policies that do generate indemnities. The USDA's Risk Management Agency (RMA) oversees the program. The RMA has headquarters staff in Washington, DC, an office in Kansas City that handles most of the data crunching, and ten regional service offices across the country.

Participation in the federal crop insurance program expanded significantly after passage of the Agricultural Risk Protection Act of 2000 (ARPA). The FY 1999 budget resolution had provided the House and Senate Agriculture Committees with additional funds totaling $8.2 billion over five years to improve the program. In ARPA, most of those funds were devoted to increasing the premium subsidy to purchasers of crop insurance, but a significant amount was set aside to encourage the development of new insurance products to cover underserved crops and regions of the country. ARPA also authorized the development of policies to cover revenue from livestock operations. Since the passage of ARPA, acreage enrolled in the program has increased 24 percent, mostly through improved coverage for pasture and rangeland as well as the addition of new policies to cover horticultural crops not previously insurable under the program (Figure 7). The passage of ARPA also marked the wider adoption of policies that indemnify crop revenue losses, not just physical yield losses. The former is called a revenue policy,

Figure 7 | Insured Crop Acreage, 1981-2010



NOTE: Includes Buy-up and CAT
SOURCE: RMA/USDA

while a crop yield policy, also called an APH policy for the Average Production History of the farmer being insured, remains available but is used less widely. ARPA provided more favorable subsidy terms for such revenue policies than had previously been available, and revenue policies now account for the bulk of policies purchased.

Crop farmers can buy two basic types of insurance policies. The first is *catastrophic coverage*, or CAT, for which the farmer pays a flat administrative fee of $300 per crop per county and no risk-based premium, and through which the farmer will receive a payment if losses exceed 50 percent of expected production, paid at 55 percent of expected market price (a maximum of 27.5 percent of the value of the individual crop insured if a total loss occurs). The second type is known as *buy-up coverage*, and can be purchased with a loss threshold ranging from 50 percent (denoted as a *50/100 policy*) to 15 percent (denoted as an *85/100 policy*). The premiums are assigned based on the region's loss history, and they increase as the threshold declines (because all else being equal, a payout is far more likely with a 15 percent loss threshold than with a 50 percent loss threshold.) The crop value insured is based on the farmer's individual production history for the crop in question. These two policy types account for 96 percent of the policies sold in 2010.

Other policy types are for area coverage (paid out on losses occurring countywide) or for adjusted gross revenue from overall farm operations. There are also weather index policies for pasture, forage, and rangeland. The RMA provides policies for more than 100 crops, but those available for horticultural crops are APH policies, not revenue-based. The proper design of a revenue policy in most cases requires a publicly available, reliable market price at which the commodity is widely traded, which does not exist for most specialty crops. Such crops are typically grown under production contracts with processors, rather than in a robust public market. Except for catastrophic coverage, farmers do not pay the full cost of their insurance, receiving premium subsidies that average 60 percent of total premiums across all types of coverage.

The overall liability from crops insured has grown considerably in recent years—an increase of 160 percent since 2000. Many factors have contributed to this growth. The increase in acreage covered and the emergence of revenue policies have both played a role. However, crop prices for the main crops insured under the program—corn, soybeans, and wheat—have soared in recent years in part due to increased production of biofuels, and the program's liability is directly linked to the value of the crops insured. Thus, unlike the other farm safety net programs, crop insurance program costs tend to increase as crop prices increase. The Congressional Budget Office (CBO) estimates that the annual cost of the program rose from $3.25 billion in FY 2002, which included indemnities paid for the 2001/02 crop year, to $7.9 billion in FY 2009 (for the 2008/09 crop year). The CBO projects that outlays under the federal crop insurance program will exceed those under all the other farm safety programs combined, including the direct payment program, on average, crop insurance outlays are projected to be just under $8 billion per year between 2011 and 2020.[26] Unlike the CCC programs described above, the federal crop insurance program is funded through a separate government-established corporation, the Federal Crop Insurance Corporation (FCIC). The FCIC is run by a board consisting of appointees from the agricultural sector, including growers and someone with expertise in actuarial sciences, as well as select senior officials from the USDA.

For the 2010 crop year, about 256 million acres of cropland were insured under the federal crop insurance program, accounting for about 80 percent of acres planted to principal crops. The level of participation varies considerably across the regions of the country—in the Midwest, states such as Iowa and Illinois respectively had 86 percent and 77 percent of cropland acres insured in 2010, nearly all with buy-up policies. On the other hand, farm states in the South had moderate shares of acres covered but mostly with catastrophic policies, such as Arkansas with 62 percent enrolled. The lowest participation levels are found in states in the East and West such as Connecticut and Utah, which covered 26 percent and 16 percent of their cropland, respectively. A special provision of ARPA provided

additional funds to so-called "underserved" states, to help those states find ways to encourage their farmers to participate in crop insurance or other forms of risk management.

Most provisions of the Federal Crop Insurance Act do not expire, and there is normally no reason to include crop insurance issues within the farm bill process. The 2008 farm bill was an exception to that rule, because a number of the budget cuts within programs under the Agriculture Committees' jurisdiction came out of the crop insurance program. Most of the savings were generated using timing shifts—i.e., by moving various payment and outlay flows that occur amongthe USDA, insurance companies, and insured farmers in or out of the ten-year projection window used by the CBO. Timing shifts impose opportunity costs on the companies in terms of delayed access to revenue or the cost of borrowing to tide them over, but otherwise do not affect them financially. Additional reductions to companies' revenue flows were imposed as part of the 2010 renegotiation of the long-term financial agreement between the USDA and the companies, called the Standard Reinsurance Agreement (SRA). The new SRA, which is projected by the CBO to reduce spending on the crop insurance program by about $6 billion between 2011 and 2020, took effect in the 2011 crop year.

Non-Insured Crop Disaster Assistance Program

The Non-Insured Crop Disaster Assistance Program (NAP) is available to producers of crops that are not covered under the federal crop insurance program. NAP's structure is similar to that of CAT, with farmers paying an administrative fee of $250 per crop per county, with an overall cap of $1,875 across all NAP crop units.[27] As with CAT, a farmer is eligible to begin receiving payment once the loss exceeds 50 percent of expected production, and the indemnity is paid on 55 percent of the expected market price. This program was established as part of the FAIR Act of 1996, and was improved under ARPA in 2000 by removing the requirement that no payments be made under NAP unless the farmer's entire county experienced a substantial crop loss. On average, about $90 million in payments have been made annually under this program over the last five years. The program is operated by the FSA.

Supplemental Revenue Assurance Program and related programs

In the late 1990s through the inauguration of President George W. Bush in 2001, Congress had regularly provided ad hoc agricultural disaster assistance, averaging about $1.5 billion each time, to supplement indemnities paid under the federal crop insurance program. More importantly, each piece of legislation carried an emergency designation, which exempted it from "Pay-as-you-go" requirements under Congressional budget rules. The Bush Administration, however, refused to go along with an emergency designation for such programs, requiring instead that the cost of the ad hoc assistance be offset by reducing payments from other farm bill programs. This insistence made the legislative process much more difficult. So rather than passing an ad hoc program each year, Congress was only able to enact a package on two different occasions that provided assistance for losses going back up to two years, using offsets from conservation programs. To reduce overall costs, Congress also added a provision restricting farmers with multiple years of crop disasters from requesting payment for more than one of the years.

These additional hurdles in the process of providing ad hoc disaster assistance caused frustration among groups representing affected farmers and among members of Congress who represented states in the Midwest and the Great Plains, which are often hit by natural disasters. They thus sought permanent authority and funding for such programs. Those members of Congress were well-positioned, particularly in the Senate, to insist that such a package be included in the 2008 farm bill—as senior members of the Senate Finance Committee, they had the jurisdictional authority to provide additional funding that would enable the farm bill process to be completed.

The single biggest component of the package that resulted from this effort is the Supplemental Revenue Assurance Program (SURE), which pays crop producers if they experience a decline in farm revenue (including

crop insurance indemnities and other government payments) on their farm across all crop enterprises resulting from natural disaster. This approach represents a change from the traditional formula for crop disaster programs, which have tended to pay based on losses beyond a specific threshold on a crop-by-crop basis, not on overall crop revenue. This program is linked with the federal crop insurance program—the revenue guarantee for each farm is derived from the farmer's crop insurance coverage level, and participation in crop insurance for insurable crops and NAP for non-insurable crops is required to receive payments under SURE.

The calculation of SURE benefits is computationally complex; it requires tracking individual farmers' acreage and yield for each economically significant crop grown and subtracting other federal payments received (though only 30 percent of direct payments received are included). As the formula requires data on the full marketing year price for each crop for which a loss is incurred, the payout occurs well after the disaster actually happens.

The other programs included in the disaster assistance package in the 2008 farm bill are as follows: 1) the Livestock Indemnity Program, which compensates livestock producers for the death of animals in their herds or flocks due to natural disasters; 2) the Livestock Forage Disaster Program, which provides payments to producers of cattle if the viability of the pasture or rangeland they use to graze their animals is adversely affected by severe drought or fire; 3) the Tree Assistance Program, to provide owners of orchards or nursery tree operations (such as Christmas tree farms) with compensation for losses of trees in their operations above normal mortality levels, and 4) Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish (ELAP), a program intended to cover losses not otherwise included in one of the other four programs. This last program is allotted a flat $50 million per year, while the others are paid out on an as-needed basis. With the exception of ELAP, these programs had appeared previously in various ad hoc disaster assistance packages. All of them are delivered by the FSA.

Although billed as permanent disaster programs, the components of this package were only provided funding for four years, due to the tight budgetary environment for new programs in the 2008 farm bill process. The programs expire on September 30, 2011, a year ahead of the rest of the farm bill programs, although they will cover losses that occur on or before that date. The cost of the package of programs was estimated by the CBO, at the time they were enacted, at $3.8 billion for the 2008–2011 crop years. Because of the complexities and built-in lags described above, SURE payments to date have only been made for the 2008 (full) and 2009 (partial) crop years, and they have totaled $2.3 billion through April 2011. Payments under the other four programs have totaled about $430 million. In its March 2011 baseline, the CBO projected that $6.7 billion will be spent on these programs through FY 2013.

Involvement in the legislation by the Senate Finance Committee and House Ways and Means Committee led to an unusual funding mechanism for these programs. They are paid for through a Trust Fund generated by transferring 3.08 percent of import duties collected under the Harmonized Tariff Schedule from the Treasury General Fund. Consequently, they are not considered to be CCC programs. Extending these programs for the life of the 2012 farm bill would require finding additional offsets to pay for them, and the approach taken in the 2008 farm bill would not pass muster under the current "Cut-go" rules of the House of Representatives, which do not permit increased revenue to serve as an offset.

Based on the first year or so of payments under SURE, the distribution of funds skews to regions of the country with high participation in the crop insurance program, and which also have experienced a run of adverse weather in recent years. This distribution is similar to what prevailed under ad hoc programs in the previous decade, and tracks closely with the states whose members viewed these programs as legislative priorities in the 2008 farm bill. Comparing the lists of top ten

states receiving assistance under SURE and those benefiting from previous packages in 2003 and 2004, seven states appear on both lists—North Dakota, Texas, Kansas, South Dakota, Nebraska, Colorado, and Minnesota. Under SURE, farmers in the top ten states have received 70 percent of all payments distributed. Although purchase of CAT or NAP technically qualifies a farmer for SURE eligibility, the formula for determining payments under the legislation would provide only an additional $2,500 to a farmer with a net crop revenue loss of $100,000 if he carried only catastrophic coverage on his crops. Not surprisingly, this program is not well regarded by farmers in states where the percentage of buy-up crop insurance coverage is relatively low, as is common in the South.

Emergency conservation programs

In addition to programs that provide compensation to farmers losing crops or livestock due to natural disasters, most ad hoc agricultural disaster assistance packages in recent years have included programs intended to assist farmers in rehabilitating fields or structures damaged by natural disasters. The Emergency Conservation Program (ECP) provides funding on a cost-share basis (up to 75 percent) and technical assistance to help farmers rehabilitate farmland damaged by flooding or as a result of long-term droughts. Unlike most of the programs discussed previously, the ECP is funded on an as-needed basis by Congress, often as part of supplementary appropriations legislation. When ECP funding is provided, it is allocated for distribution by state and county FSA technical committees in states where widespread natural disasters have occurred. The FY 2009 consolidated appropriations bill provided $115 million in funding for the ECP, to be available until expended.

A similar program, the Emergency Forest Restoration Program (EFRP), provides cost-share funding to owners of non industrial private forests. The EFRP was provided $18 million in funding in the FY 2010 supplemental appropriations bill. Unless a waiver is granted by FSA headquarters, no individual can receive more than $100,000 under either the ECP or ERFP per disaster.

A third program, the Emergency Watershed Program (EWP), provides funding to assist in the cleanup of widespread flood damage, and can also be used to purchase easements on frequently flooded cropland to divert it from agricultural use. The EWP was provided $145 million in funding to purchase easements under the American Recovery and Reinvestment Act of 2009, more commonly known as the Obama stimulus package.

Both the ECP and EFRP are run by the USDA Farm Service Agency, while the EWP is run by the USDA Natural Resources Conservation Service for damages on private lands and the USDA Forest Service for damage to lands in the National Forest Service system. Authority for both the ECP and EWP was established in the Agricultural Credit Act of 1978, while the EFRP's provenance is more recent, having been established in the 2008 farm bill.

Under these programs, the money goes where the disasters occur. Of the $87 million provided under the ECP in FY 2008, the top five states (Iowa, Illinois, Oklahoma, Indiana, and Texas) received more than 55 percent—due to a major spring flood in the Midwest and flooding from the remnants of Hurricane Gustav in the Southern Plains.

Ad hoc disaster assistance programs

In both 1994 and 1998 Congress passed crop insurance reform that purported to make it impossible to pass new legislation providing ad hoc assistance, but later Congresses found ways around those legislative obstacles. Then in the 2008 farm bill, as we have seen, Congress made a concerted effort to establish a comprehensive structure for standing agricultural disaster assistance. But even since then, some residual demand for ad hoc programs persists. After crop losses associated with multiple hurricanes during 2008, members of Congress from Southern states sought ad hoc assistance, claiming that the new set of programs from the 2008 farm bill did not work for their farmers. Rather than go back to the previous formula for ad hoc disaster assistance of paying when individual crops met a loss threshold of 35 percent, Congress instead chose to work within the framework of the new programs.

Provisions of the 2008 farm bill already allowed those farmers who had not signed up for crop insurance or NAP prior to the 2008 sales closing date for spring-planted crops (generally falling in late February or early March) to pay a fee equivalent to the CAT or NAP fee to allow them eligibility for the new standing disaster programs, in particular the SURE program. This ad hoc provision allowed farmers to elect to receive assistance under SURE for 2008 crop losses as though they had originally purchased 70/100 buy-up crop insurance coverage, if they would agree to purchase buy-up coverage of at least that level for the following two years. This provision was enacted into law as part of the 2009 stimulus bill, and payments using this modified formula accounted for 38 percent of SURE payments made for 2008 losses, or more than $800 million.

In 2009–2010, continuing dissatisfaction with the statutory formula for the SURE program led to some pressure by members of Congress from Southern states for a new ad hoc assistance package for 2009 crop losses. They not only rejected the original SURE formula but also the modified SURE approach used for 2008 losses. Although the latter approach was quite lucrative for farmers receiving assistance, these members of Congress found it lacking because it took more than a year after the actual losses to pay out. The members thus instead introduced a bill that specified that payments be made to farmers raising program crops in disaster-designated counties based on their existing payment yields and acres under the direct payment program, having only to establish a minimal (5 percent) loss on their farms.

This approach was pursued on the expectation that it would pay out relatively quickly, even though it might provide assistance to some farmers who had only minimal losses. This legislation, with a CBO score of $1.5 billion, was attached to a number of packages that passed the U.S. Senate during 2010, but it never gained traction in the House of Representatives. Instead, a smaller version of the package was promulgated by Agriculture Secretary Vilsack in October 2010 under his authority to spend money under Section 32 of the Agriculture Act of August 24, 1935, to "reestablish the purchasing power of farmers, ranchers, and producers." This package provided $550 million, at a fixed payment rate per acre, to producers of rice, cotton, soybeans, and sweet potatoes who suffered losses due to excessive moisture or related conditions in 2009. At the time, this action was widely interpreted as an effort to assist the electoral prospects of Senator Blanche Lincoln (D-Ark.), the package's chief sponsor.

Farm Loans and Related Credit Programs

In addition to providing cash payments to farmers through a multitude of programs, the USDA also provides loans or loan guarantees to farmers for a variety of purposes. Because modern agriculture is a highly capital-intensive business, many commercial-scale farmers don't have sufficient cash flow to enable them to cover the purchase of inputs such as seed, fertilizer, and agricultural chemicals for each planting season out of pocket, much less the purchase of farm equipment or farmland. The current forms of direct, guaranteed, and emergency loan programs were all authorized in the Consolidated Farm and Rural Development Act passed in 1961 (and amended several times since), although various types of emergency lending authority have existed since 1918. With the exception of the farm storage facility loan program, all farm loan programs are funded through annual appropriations. According to testimony provided by the Acting Administrator of the FSA to the House Committee on Appropriations in March 2011, the USDA provided loans to more than 36,000 farmers and ranchers in FY 2010. A 2005 study found that direct and emergency loans were provided disproportionately to farmers in the core farm states of the Midwest and Great Plains, although loans were made in every part of the country.[28]

Direct operating and ownership loans

The Farm Service Agency provides direct loans to farmers andother legal entities, such as cooperatives and partnerships. *Operating loans* cover the purchase of variable inputs; *farm ownership loans* cover the purchase of farmland or the repair or construction of buildings or conservation structures, such as barns and farm

terraces. Farmers applying for such loans are also required to complete farm and financial training courses. To obtain a loan, a farmer must have an acceptable credit history but nonetheless be unable to obtain credit elsewhere. Only farmers owning and operating their own farms are eligible for farm ownership loans, but both they and farmers who farm as tenants are eligible for operating loans. A farmer can apply for a direct ownership loan only if he or she has participated in the operation of a farm or ranch in three of the past ten years. Interest rates are determined by the cost of government borrowing. As of April 1, 2011, farmers were being charged 5 percent per annum on direct ownership loans, and 2.75 percent for direct operating loans.

All loans must be secured by collateral, meaning planted crops, livestock, or equipment for operating loans and the land itself for ownership loans. The amount of money borrowed cannot exceed $300,000 annually for either category. (That amount represents a 50 percent increase in the limit that prevailed prior to the 2008 farm bill.) Available funds are allocated on a state-by-state basis, with a certain share held back for a portion of the year to lend to "limited resource" or beginning farmers. For FY 2010, the FSA had authority to lend $2 billion under the direct loan program, although under budget rules applying to credit programs government-wide, only the cost of the program as calculated by the risk of default is charged to the federal government. Under these rules, the cost of the direct program was estimated to be $91 million in FY 2010.

Guaranteed operating and ownership loans

The FSA also provides guarantees to banks that make operating or ownership loans to farmers or other legal entities. This program is utilized by farmers with better credit worthiness than those using the direct program, but who are still unable to borrow at attractive interest rates from banks without the federal guarantee. If the farmer defaults on the loan, the bank can normally recoup up to 90 percent of the delinquent loan value from the USDA. The bank pays a 1 percent fee for the guaranteed portion of the loan, a cost that can be passed onto the borrower.

Other criteria for this program are the same as for the direct loan program, in terms of use of funds and providing collateral. Interest rates on guaranteed loans are negotiated between the bank and the borrower. The limit for guaranteed loans for either operating or ownership purposes is $1.19 million. That level, set in 2008, is due to increase over time based on annual changes in the index of Prices Paid to Farmers. For FY 2010, the FSA had authority to guarantee loans totaling $3.8 billion under the guaranteed loan program (both subsidized and unsubsidized), with the cost of the program estimated to be $55 million. As noted above, under government-wide rules on accounting for the cost of credit or credit guarantee programs, the USDA is assessed the cost of expected losses under each type of program for budgetary purposes, not the full amount of loans extended.

Emergency loans

Farmers can seek loans to help them deal with the effects of a natural disaster if they live in a county so designated by the President, or live within the boundaries of a quarantine imposed by the Secretary of Agriculture under plant or animal quarantine laws. As with the other loan programs already discussed, this program is operated by the FSA and can be applied for at any county FSA office. As of April 1, 2011, farmers receiving emergency loans were being charged 3.75 percent interest per annum. Loans are made on the actual value of losses, with a maximum of $500,000. The FSA made an average of 321 emergency loans in FY 2009–2010, with an average loan size of about $110,000. The FSA estimates that $56 million in emergency loans will be made in FY 2011.

Farm storage facility loan programs

The FSA is also authorized to make loans to farmers to construct storage facilities on their farms to hold grains, oilseeds, pulse crops, hay, and dedicated energy crops, as well as cold storage facilities for fresh fruits and vegetables. Such a program has been available in various forms to farmers since the Agricultural Act of 1949, but the program was modified in the 2008 farm bill to reflect

changes in the U.S. agricultural sector. The 2008 provision broadened the list of eligible commodities beyond the traditional program crops and increased the maximum loan size from $100,000 to $500,000.

Borrowers must have an adequate credit history and no delinquent federal debt, and must demonstrate a need for storage and the ability to repay. Loans can be made for terms of seven, ten, or 12 years, depending on the amount borrowed, and must be secured by collateral. Interest rates charged vary according to the term of the loan, with longer terms having higher rates. The 2008 provision gave the Secretary the authority to accept collateral other than a lien on the property on which the facility is built. In FY 2010, $12 million in mandatory funding was spent on this program.

Sugar producers have a separate farm storage loan program, also run by the FSA, for the storage of raw or refined sugar. Eligibility requirements are similar to the general program described above. The main differences are that loans under the sugar program can have terms up to 15 years, and there is no maximum loan size.

Special provisions for beginning farmers

With the high cost of land and equipment facing U.S. farmers and ranchers, and with only 8 percent of all farm operators being under the age of 35 at the time of the 2007 Census of Agriculture, most recent farm bills have included special provisions, particularly in the farm credit policy area, to help young people break into farming. For the purposes of USDA loan programs, *beginning farmers* are defined as those with between three and ten years of experience in farming. Such farmers are given preferential access to funding under the direct and guaranteed operating and farm ownership loan programs. For the direct loan programs, 90 percent and 35 percent of ownership and operating fund monies respectively are reserved for beginning farmers for the first 11 months of any fiscal year, and under the guaranteed loan programs, the reservation levels are 25 percent for ownership loans and 40 percent for operating loans, respectively, through May 1.

The FSA also operates a down payment loan assistance program, in which federal and private funds and the buyer's own resources are combined to purchase farmland. The FSA share cannot exceed 40 percent, the buyer must provide 10 percent, and the remainder must be privately financed, either by a commercial lender or the land seller. If the commercial portion of the loan is guaranteed, the guarantee can cover up to 95 percent of the loan value, higher than is available under the regular loan guarantee program.

Beginning farmers are also given the first opportunity to purchase farmland held in the FSA inventory after an original owner defaults on his or her loan. Once advertised, such parcels can be sold only to beginning farmers for the first 135 days. If no FSA direct ownership loan funds are available at the time, the FSA may lease that land to a beginning farmer for up to 18 months or until the time that direct loan funds do become available.[29]

Provisions for Specialty Crop Producers

For the first time in the 2008 farm bill, groups representing specialty crop producers were able to muster a coalition of sufficient political weight to enable them to demand a tranche of funding devoted to programs specifically addressing their members' needs. The horticulture and organic agriculture title—the first farm bill title ever devoted to specialty crop issues—was funded at about $1 billion over the 2008–2017 period.[30] Unlike their counterparts in the row crop sector, representatives of specialty crop producers have not sought a farm payment safety net to support their prices or incomes. In fact, they have specifically rejected such a path, fearing it could lead to an expansion in the production of horticultural crops and a weakening of their market power. Prior to the 2008 farm bill process, their main focus was to retain the provision that barred program crop producers from planting fruits and vegetables on their program acres, the so-called *planting flexibility restriction*. Their rationale for this position is that otherwise program crop producers would be able to "cross-subsidize" their specialty crop production,

putting the non-program crop producers at a competitive disadvantage.

Specialty crop block grants

The specialty crop block grant program was the largest component of the new specialty crop title, at $466 million over ten years and accounting for about 47 percent of total funding allocated to that title. Unlike the other specialty crop programs, the block grant program was first established prior to the 2008 farm bill, with mandatory funding of $160 million provided as part of the ad hoc agricultural disaster assistance package passed in August 2001. The program distributes funds to state governments based on their share of U.S. specialty crop production, and gives them broad discretion as to how it can be spent, as long as it "improve[s] the competitiveness of U.S. specialty crops."[31] The program received permanent authority with the passage of the Specialty Crop Competitiveness Act of 2004, but was subject to the annual appropriations process. It received $7 million and $8.4 million respectively in funding in the FY 2006 and FY 2008 agricultural appropriations bills. Since the program was provided with mandatory funds in the 2008 farm bill, program activities by various states have included (according to the National Sustainable Agriculture Coalition) research into seed improvement, extension grants to improve awareness of the nutritional value of fruits and vegetables among consumers and the importance of good agricultural practices among farmers, marketing feasibility studies (domestic and international), farmer market promotion efforts, studies on pest and disease control, and work on storage and supply chain efficiency.

In FY 2010, the USDA's Agricultural Marketing Service distributed $55 million under this program, with the largest amounts going to California ($17.3 million), Florida ($4.8 million), Washington ($3.7 million), and Texas ($1.8 million). The law requires that every state receive at least $100,000, or 0.33 percent of available funds, whichever is larger.[32]

Pest and disease management and research programs

Most of the remaining funds for the specialty crop title were allocated to programs designed to address ongoing pest and disease pressures on the U.S. horticultural sector. Specifically, 40 percent of the title's resources were designated for two programs: one intended to help states conduct early plant pest detection and surveillance activities ($377 million over ten years) and a separate one to set up "clean plant centers" that would provide pathogen-free propagative plant material to state agencies or private nurseries ($20 million over ten years).

The specialty crop producer groups were also instrumental in obtaining $230 million over ten years for a specialty crop research initiative that was included in the bill's agricultural research title (not the specialty crop title), with research on pest and disease issues prominent in the authorizing language for the initiative.

The USDA's Animal and Plant Health Inspection Service (APHIS) has been charged with implementing the early plant pest detection and surveillance provision. Under the 2008 farm bill, funding levels ramp up over time, starting with $6 million in FY 2009 and going up to $50 million for FY 2012 and the following years. Of the $45 million distributed by APHIS under the program for FY 2010, $17.5 million was spent on enhanced surveillance and analysis, $12.4 million on enhanced mitigation capacity, and $5.4 million on pest identification and technology enhancement. The clean plant network program is being run jointly by APHIS, the USDA's Agricultural Research Service, and the USDA's National Institute of Food and Agriculture (formerly the Cooperative State Research, Extension, and Education Service). Funds under this program are awarded through a competitive process. Funds from the specialty crop research initiative are also awarded through a competitive process by the USDA's National Institute for Food and Agriculture. This initiative, along with a smaller one focused on research on organic production issues, were the only agricultural research programs to receive mandatory funding in the 2008 farm bill.

Organic programs

Organic agricultural production in the United States, although still accounting for only 4 percent of total U.S. food sales, has been growing at a much faster rate than other segments of the food industry. The Organic Trade Association reported on April 21, 2011, that U.S. sales of organic food and drink rose 7.7 percent in 2010, compared to less than 1 percent for overall U.S. food consumption, with an average annual growth rate of more than 25 percent since 2002.[33]

Analysts at the USDA's Economic Research Service estimated that there were nearly 13,000 certified organic farming operations in the United States as of 2008. The USDA's Agricultural Marketing Service oversees the accreditation of state-level organic certifying agents and the enforcement of national organic standards, which have been in place since 2002. The rulemaking process for organic standards, which was set in motion with the passage of the Organic Foods Production Act as part of the 1990 farm bill, proved to be long and drawn out. In a period before the advent of the internet and the electronic submission of comments, the initial organic standards proposal released by the USDA in late 1997 generated more than 275,000 comments, most of them expressing concerns about allowing the use of GMOs, irradiation, and sewage sludge in organic operations. Those aspects were dropped in the final rule.

The process of becoming certified as an organic producer is costly and cumbersome, as most state certification programs require that farmers refrain from using conventional agricultural chemicals, seeds, and practices in the farming operation being converted to organic for up to three years *before* being certified. A provision of the 2002 farm bill initially provided $5 million in mandatory funds to assist aspiring organic farmers, on a cost-share basis, to become certified organic producers, with the maximum amount provided to any farmer at $500. Additional funding of $22 million was provided in the 2008 farm bill, with the maximum assistance level per farmer raised to $750.

The other organic program with mandatory funding that was included in the specialty crop title provided $5 million to improve the collection and reporting of data on the marketing and production of organic agricultural products. The agricultural research title mentioned above included $78 million over 2008–2012 for research and extension activities in the area of organic agriculture, building on the more modest amount ($3 million) provided in the 2002 farm bill. In addition, the 2008 farm bill authorized assistance to farmers implementing new conservation practices who are either certified organic producers or pursuing organic certification under the Environmental Quality Incentives Program (discussed later).

Impact of Federal Biofuels Programs on U.S. Farmers and Ranchers

While most of the components of federal biofuels policy are outside the jurisdiction of the House and Senate Agriculture Committees, the expansion of biofuels production over the last few years, which has resulted in part from policy changes, has had a profound impact on U.S. agriculture. In fact for the National Corn Growers Association, which represents producers of the largest U.S. crop by both value and acreage, participation in the debate over the Energy Independence and Security Act of 2007 and a desire to expand the requirements for biofuels use under the Renewable Fuel Standard were much higher priorities than the debate over the 2008 farm bill, which occurred during largely the same period.

Over just the last ten years, the share of U.S. corn used for producing ethanol has increased from about 7 percent in 2001 to about 40 percent projected for 2011.[34] This additional demand has increased the number of acres planted to corn, initially at the expense of other crops (primarily soybeans, wheat, and cotton) and contributed to price increases for most row crops. The higher prices have also raised feed costs for livestock producers, even though the use of corn as a feedstock for ethanol does generate corn by products that can be used, to varying degrees, in feed rations by livestock as a replacement for bulk corn and/or soybean meal.[35] Corn currently accounts for about 98 percent of the feedstock used to produce ethanol in the United

States; the remainder is derived from grain sorghum, wheat, and potato waste.

For its first 20 years or so, ethanol production in the United States rose relatively slowly, from 175 million gallons in 1980 to about 1.8 billion gallons in 2001. The 1990 amendments to the Clean Air Act identified ethanol as a oxygenate additive to gasoline that would help regions with air pollution reduce the emission of smog-producing compounds into the air. Ethanol was the oxygenate of choice in Midwest cities, but most reformulated gasoline sold outside the Midwest was made with methyl tertiary-butyl ether (MTBE), a petroleum derivative, as the oxygenate rather than ethanol. The first major driver for the quantum leap in ethanol demand was the phase-out of MTBE from the gasoline supply beginning in about 2004, after it was recognized that MTBE was leaching into groundwater across the country (primarily from leaking storage tanks at gasoline stations), and that this substance makes water undrinkable at fairly low concentrations due to its foul taste and odor. MTBE was completely removed from the U.S. fuel supply by 2006. The end of the line came because Congress declined to give MBTE manufacturers liability protection from multiple lawsuits over groundwater contamination.

Tax credits for blending renewable fuels into the U.S. transportation fuel supply

A *blender's credit* for ethanol was the earliest piece of federal biofuel policy; it was established as part of the Energy Tax Act of 1978 as a $0.40/gallon exemption from the fuel excise tax that funds the Highway Trust Fund. The provision was intended to make ethanol more competitively priced with gasoline. Two years later, a corresponding import duty was imposed on imported ethanol, as a rough offset to the benefit that foreign-sourced ethanol would receive from the blender's credit. Since both provisions are tax- or revenue-related, they fall under the jurisdiction of the Senate Finance and House Ways and Means Committees. The rate for the excise tax exemption was raised to $0.60/gallon in 1984. A small ethanol producer's tax credit that provided an additional $0.10/gallon for the first 15 million gallons of production was added in 1990.[36]

In 2004, the excise tax exemption was replaced with an excise tax credit, offered at a rate of $0.51/gallon.[37] This modification was made to allow the tax benefit to the ethanol industry to be provided out of the General Treasury Fund rather than the Highway Trust Fund, because supporters of the highway construction industry were complaining that the excise tax exemption was a significant drain on funds that would otherwise be available for highway construction and repair. A similar blender's credit for biodiesel, made primarily from soybean oil and animal fats, was created as part of the Energy Policy Act of 2005, at a rate of $1.01/gallon. The ethanol blender's credit was lowered to $0.45/gallon as part of the Finance Committee provisions in the 2008 farm bill and extended through December 31, 2010. The biodiesel tax credit was allowed to lapse through most of 2010, though it was renewed for one more year along with the ethanol tax credit as part of the legislation extending the Bush tax cuts in December 2010. In the current budget environment, the survival of the blender's credit for either fuel beyond the end of 2011 is in serious question.

Renewable fuel standards

A statutory requirement to utilize prescribed amounts of renewable fuel in the U.S. motor vehicle fuel supply was first established as part of the Energy Policy Act of 2005. The first Renewable Fuel Standard (RFS) applied only to the use of ethanol, and the mandated level was specified to begin at 4 billion gallons and ratchet up to 7.5 billion gallons by 2012 (Figure 8). After the removal of MTBE from the fuel supply by the end of 2006, the U.S. ethanol industry blew through the mandated RFS levels fairly quickly, and within two years was back before Congress requesting higher levels. As part of the Energy Independence and Security Act of 2007 (EISA), Congress raised the overall RFS, starting with required use of 9 billion gallons in 2008 and expanding to 36 billion gallons by 2022. In acknowledgement of the pressure that increased corn use for ethanol was putting on other sectors of U.S. agriculture, the new RFS requirements allow only up to 15 billion gallons of ethanol produced from corn starch to count toward meeting the standard in any given year. The new RFS, dubbed RFS-2 by the Environmental Protection Agency (which enforces the

provisions), also includes a separate mandate for biodiesel, starting at 500 million gallons in 2009 and ending with 1.28 billion gallons in 2013.[38]

The remaining 21 billion gallons of biofuels that will be needed by 2022 will need to come from some feedstock other than corn, with much of the attention now focused on producing biofuels from cellulosic feedstocks such as grass, wood, algae, and crop byproducts. For some time, researchers have been working to develop conversion and processing technologies that would make such material an economically feasible feedstock, but so far without success.

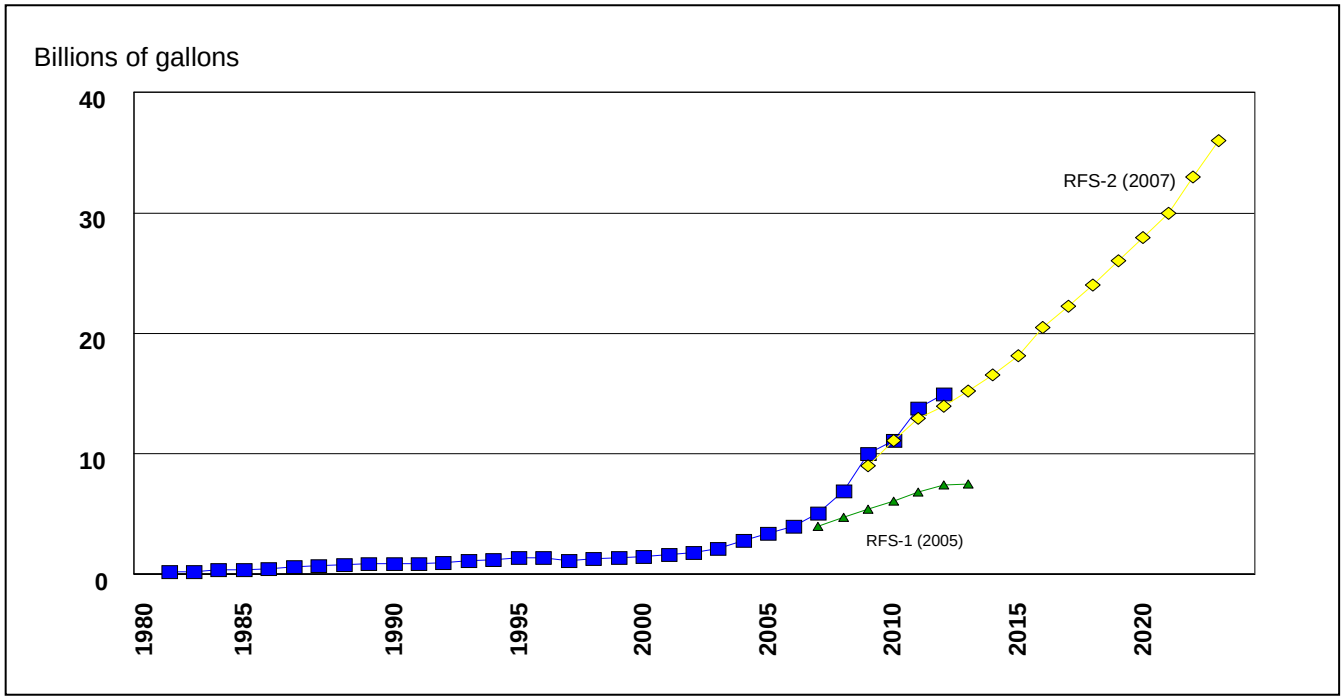
Federal biofuels research and development programs

The restriction that allows only up to 15 billion gallons of corn-starch-based ethanol to count in meeting annual RFS levels is an implicit recognition that the United States needs to develop alternative feedstocks in order for biofuels to significantly displace gasoline made from imported oil in the U.S. transportation fuel supply.

The 2002 farm bill was the first to include a title that solely addressed issues relating to biofuels and renewable energy. The main programs included loans and grants to establish bio-refineries, research and development funds for biomass, and a program to encourage the installation of renewable energy systems and improve energy efficiency on the farm. All of these programs were to be implemented by the USDA. In 1999, a CCC-run bio-energy program was established under President Clinton's Executive Order No. 13134 to provide a subsidy to purchase feedstock to increase biofuels production beyond baseline levels; this program was reauthorized in the 2002 farm bill through the end of FY 2006.[39] The five-year cost of all of the mandatory programs in the energy title of the 2002 farm bill was $405 million.

The energy title of the 2008 farm bill extended the bio-energy program but specifically excluded corn starch from eligibility as a feedstock. It also reauthorized the biomass R&D program and the rural energy-efficiency program. The main new program in the 2008 farm bill was the Biomass Crop Assistance Program (BCAP),

Figure 8 | U.S. Biofuels Production and RFS Requirements



SOURCE: Renewable Fuels Association, Nation Biodiesel Board

which was established to encourage the development of biomass conversion facilities, in concert with assistance to farmers to establish and grow dedicated energy crops such as switchgrass and hybrid poplars.
At the time the 2008 farm bill was enacted, the CBO estimated that BCAP would cost $70 million over five years. Instead, the CBO now estimates that the USDA distributed $248 million in funds under BCAP for FY 2010 alone. The excess spending resulted because the legislation and the subsequent rules initially contained a loophole that allowed paper manufacturers to claim payments under the program for the use of wood byproducts as a biomass feedstock for generating heat, an activity that was already quite common. The CBO scored the entire energy title as costing $863 million over five years, with no programs provided a baseline for funding beyond 2012.

The U.S. Department of Energy (DOE) has been both engaging in and sponsoring research on biofuels for some time, through its Office of Energy Efficiency and Renewable Energy. Their renewable energy portfolio includes alternative electricity generation sources such as wind, solar, and geothermal, as well as biofuels. They have been conducting research on new technologies to convert cellulose into sugar to make ethanol, and also working with state and local entities to identify feedstock options and the best ways to grow, collect, and transport such materials. Much of the intramural research is conducted at the DOE's national laboratories, such as those in Oak Ridge, Tennessee, and Golden, Colorado.[40] The 2009 stimulus bill provided $800 million in funding to the DOE biomass R&D program, and the FY 2010 energy and water development appropriations bill provided another $220 million.[41] The stimulus bill also provided $564 million in funding for advanced bio-refinery pilot projects, with that effort to be managed jointly by the DOE and USDA.

Implications of the expansion of ethanol and biodiesel production

In most respects, the current impact on the U.S. agricultural sector of the expanded production of biofuels, driven by federal renewable energy policy, dwarfs the effect of any of the other programs discussed in this paper. The U.S. corn crop is the largest in the country, in terms of both acres planted and value. Corn purchased for processing (mostly for ethanol but also high-fructose corn syrup and other corn-based foods and industrial products) is now the largest component of corn demand, ahead of feed use and exports.

Land Use Shifts – The economics of corn production area significant driver of gains in other crop sectors, with competition for cropland helping to boost prices for nearly all U.S. crops. As of March 31, 2011, the USDA projected that farmers would plant 92.2 million acres to corn for the 2011 crop year, the second-highest level in more than 65 years.[42] This level represents a 14 percent increase over corn acres in the 2004 crop year, which occurred as the phase-out of MTBEs began and a year before the first RFS was established. As recently as 2007, all of the increased corn acres came on cropland previously planted to soybeans or cotton. For 2011, however, cotton area is expected to make a strong comeback, due to strong export demand in the last few years.

Price Impacts – Between January 2007 and May 2008, the United Nations' Food and Agriculture Organization (FAO) estimated that prices doubled for a range of staple foods, such as rice, corn, vegetable oil, and wheat. Over that 17-month period, the corn price received at the farmgate by U.S. farmers rose 71 percent. Although many early reports assigned blame to expanded biofuels production as the primary culprit for that increase, more careful analyses after the fact acknowledged that the long-term increase in biofuels demand was one of many factors that caused crop prices to increase. Other drivers included long-term phenomena such as declining investment in agricultural research and increased food demand due to higher incomes in Asia, as well as short-term shocks such adverse weather in many key grain-producing regions such as Europe and Australia in 2006 and 2007, the declining value of the U.S. dollar, rising energy costs, and policy decisions by many governments to impose restrictions on exports or relax restrictions on imports to protect their own consumers against price impacts.[43] The underlying problem currently facing the world

market is that the quantity generally produced is closely matched by the quantity demanded. In a low-stock environment like this, even modest shocks—such as the reduced wheat crop in Russia and neighboring countries in 2010 due to drought, and lower corn yields in the United States in 2011 due to both flooding and drought—can have significant impacts on prices, which can be exacerbated if speculators or government restrictions intervene in the market.

Impact on Farm Program Spending – One of the consequences of the persistent increase in crop prices over the last few years has been a substantial reduction in spending under the farm programs linked directly to market price movements. For the 2004 crop year, right before the ethanol boom took off, the USDA made $4.3 billion in payments under the CCP program and provided $5.5 billion in benefits under the marketing assistance loan program. For the 2009 crop year, only $88 million in payments were made under the CCP, $450 million under the new ACRE program, and $130 million from the marketing assistance loan program, a 93 percent reduction in payments from price-linked safety net programs. On the other hand, the cost of the federal crop insurance program went up over the same period, largely due to higher premiums stemming from higher crop prices—from $3.2 billion in actual outlays for the 2004 crop year to $5.6 billion for the 2009 crop year. If one combines the cost of all the programs directly linked to price, overall spending on the farm safety net (excluding direct payments) fell from $13 billion in 2004 to $6.3 billion in 2009, a decline of 51 percent.[44]

Impact on The Livestock Sector – In most years, the cost of feed accounts for between 60 and 70 percent of total livestock production costs. For most livestock species raised in the United States, the most important feed ingredients are bulk corn and soybean meal, which on the surface appears to put the livestock sector in direct competition with the biofuels industry in terms of demand for corn and soybeans. However, biodiesel utilizes the oil portion of the soybean kernel, leaving the protein portion to be processed into meal for livestock feed. Similarly, ethanol production uses the starch portion of the corn germ, leaving about one-third of the mass of the kernel in the form of the protein and fiber available as a byproduct feed. A farmer's ability to incorporate byproduct feeds into livestock rations varies considerably according to which species he raises. Recent reports suggest that some hog farmers are using corn byproduct feeds such as distillers' dried grains for as much as 40 percent of their herd's diet.[45]

Nonetheless, total feed costs for 2011 are forecast by the USDA at $54.5 billion, an increase of 98 percent since 2003. Although livestock prices have strengthened lately as the global economy has recovered, U.S. livestock farmers have been facing negative operating margins for much of the last several years. Not surprisingly, groups representing livestock producers have been supportive of legislative efforts to pare back or eliminate aspects of the federal biofuels policy, in the belief that such a move would reduce biofuels production and lower feed costs.

"Food Versus Fuel" Debate – The food price spike of 2007 and 2008 sparked an international debate as whether it was appropriate to use food crops such as corn, sugar, and soybeans to produce biofuels in a world in which roughly 1 billion people are not getting enough food to eat. The more heated rhetoric, which called for banning such production, has largely faded as empirical analyses have demonstrated that biofuels demand was only one factor out of many contributing to the price spike.[46] This issue remains politically sensitive in many countries, however, and prompted the government of China in 2008 to eliminate its subsidy for grain-based biofuels, in an effort to diversify its feedstock sources.

Officials from respected institutions such as the World Bank and the FAO have suggested that countries revise their biofuels mandates so that those mandates can be suspended when food stocks become low or prices too high.[47] However, the recent food price spikes (in 2007–2008 and 2010–2011) have occurred simultaneously with increases in oil and gasoline prices, setting up a situation in which biofuels production is so profitable that it would likely continue at relatively high levels even without a mandate in place. In fact, biofuels production in the United States has exceeded the mandated level every year since the RFS was

established, although that margin may disappear if the blenders' credit is allowed to expire at the end of 2011.

Conservation/Environmental Programs

Incentives to encourage U.S. farmers to adopt conserving practices have been a part of U.S. farm programs since the very beginning, as it was recognized that poor tillage practices contributed significantly to the damage to farmland in the Midwest and Great Plains from the years of the Dust Bowl in the 1930s. For much of that period, addressing that objective was intertwined with the need to remove marginal land from production for the purpose of discouraging surplus production, a concept known as *soil banking*. In the 1980s, policymakers perceived a need to focus directly on conservation, rather than rely solely on the self-interest of farmers to preserve the natural environment. A major step in the 1985 Food Security Act was to require farmers to develop approved conservation plans for highly erodible lands or wetlands they cultivated or risk losing eligibility for a range of farm program benefits. These rules were developed under the rubric of "conservation compliance," and were amended and refined in subsequent farm bills. Current conservation compliance rules apply to participation in every major USDA farm support, working lands conservation, and loan program except the federal crop insurance program.[48] Recent efforts to include crop insurance have been unsuccessful—most row crop producers are already covered through their participation in other programs, but specialty crop producers generally are not, and they have argued that the cost of coming into compliance they would face would be prohibitive in some regions and would thus discourage farmers from participating in crop insurance at all.

The 1985 farm bill also marked the establishment of programs devoted to identifying and setting aside environmentally sensitive farmland using objective criteria. The previous approach required individual farmers to set aside their most marginal farmland, which in practice meant that high-quality farmland was idled in some parts of the country, while in other places some highly erodible farmland remained in cultivation. Within a decade or so, it was recognized that resources also needed to be devoted to improving conservation practices on working farmland, which led to the introduction of new programs in the 1996 and 2002 farm bills. Farmers must agree to undertake specific activities in order to receive payments under these conservation programs, unlike the direct benefits provided under the farm price and income support programs.

Land retirement and easement programs

The Conservation Reserve Program – The Conservation Reserve Program (CRP), established as part of the 1985 Food Security Act, was the first program dedicated to conservation measures. It was intended to allow farmers to voluntarily set aside, on a long-term basis, cropland vulnerable to soil erosion in exchange for annual payments. Farmers could plant the set-aside land in perennial grasses (normally in ten-year contracts) or trees (up to 15-year contracts). The CRP was designed to address conservation objectives, such as enhancing wildlife habitat and protecting soil quality, but it had the secondary benefit of reducing agricultural production and relieving pressure on the need to require all farmers to set aside high percentages of their cropland under the annual acreage-reduction program. The program has traditionally drawn strong support across U.S. agriculture, except for from some livestock groups, which would like to see more grain production and thus cheaper feed. The CRP also brings some unusual players into the mix who do not normally opine on agricultural policy. Because of the improved wildlife habitat benefits generated by the set-aside land, the CRP brings into the political fray the so-called "hook-and-bullet crowd," including the National Rifle Association.

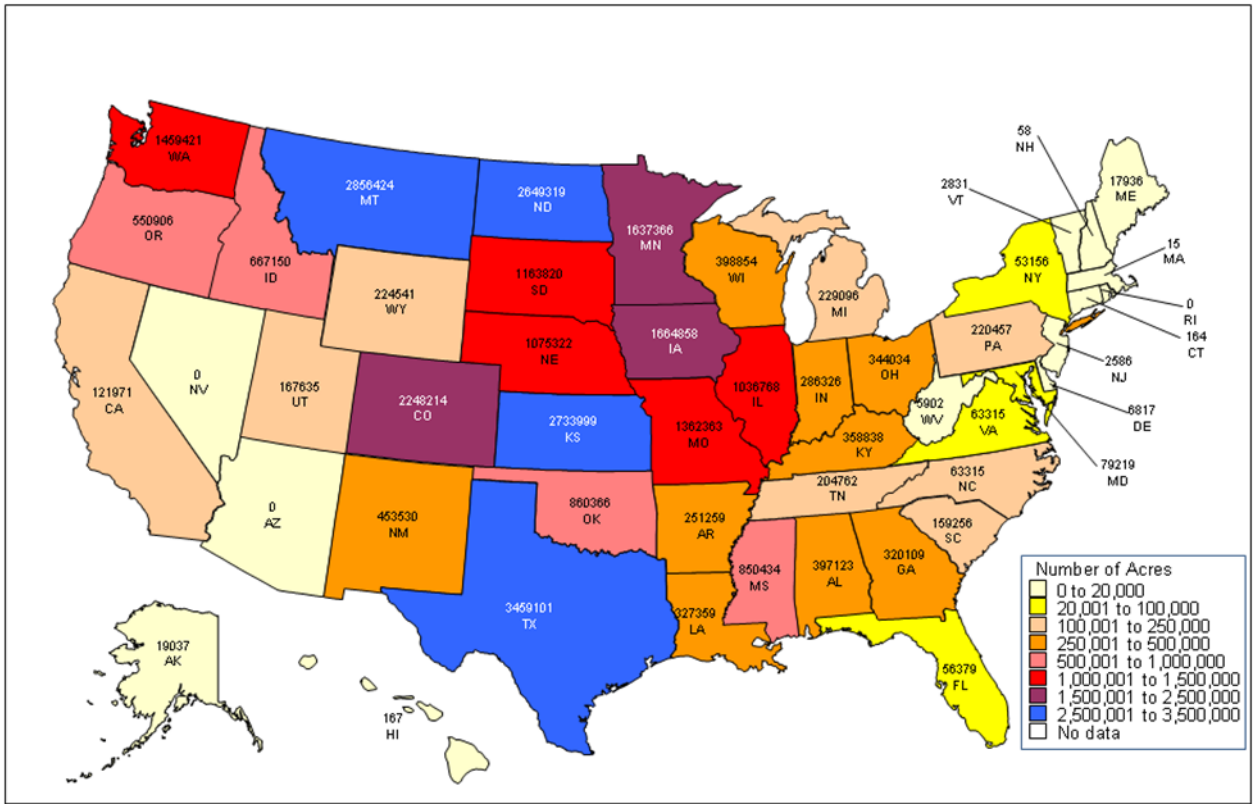
The USDA periodically announces a general sign-up for the CRP, and farmers who desire to enroll land in the program submit a bid detailing the environmental benefits that would be derived from entering that parcel into the CRP and the per-acre rate he or she would be willing to accept in lieu of continuing the land in cultivation. The USDA evaluates the submitted bids and accepts those it deems within established criteria and

available at reasonable rates. The USDA also regularly accepts specified parcels into the CRP, such as strips of land that border streams or rivers (called *buffer strips*) in a separate continuous enrollment process. The CRP is operated by the Farm Service Agency.

At an annual cost of about $2 billion, the program has enabled farmers to set aside between 30 million and 36 million acres each year, with about three-quarters of CRP acres located in the Great Plains and Midwest states (Figure 9). According to the Environmental Working Group's farm subsidy database, the top 10 percent of recipients under the CRP collected 58 percent of all payments between 1995 and 2009. Since 1997, the FSA has been authorized to use CRP funds to work with state agencies to enroll groups of farmers within regions such as watersheds or counties into a Conservation Reserve Enhancement Program (CREP), with all farmers adopting similar practices to meet a region-wide set of objectives. Eligible CREP practices can include (but do not require) land retirement. For example, the state of New York runs a CREP project aimed at improving water quality in the state's 12 major watersheds by encouraging farmers to adopt practices such as installing buffer strips and planting cover crops, which help reduce agricultural chemical and animal waste runoff.[49] As of March 2011, 31.2 million were acres enrolled under 748,000 CRP contracts, about one-tenth of those under CREP projects in more than 30 states, with the biggest CREP acreage in Pennsylvania, Illinois, Ohio, Kentucky, and Minnesota.[50]

In periods of high crop prices, farm groups and other agricultural interests invariably try to convince Congress to make it easier for farmers to withdraw their land from the CRP before their contract expires andput it back into cultivation. Under current rules, farmers exiting the program early must reimburse what the government spent to establish a cover crop on the set-aside land (plus interest), and pay back 25 percent of what they earned on rental payments under the CRP contract. In May 2011, a coalition of 72 state and national farm

Figure 9 | Cumulative CRP Acres by State, as of July 2009



groups, agribusinesses, and trade associations wrote to the chairs of the House and Senate Agriculture Committees, requesting that Congress provide "flexibility in the Conservation Reserve Program" so as to enhance the sector's ability to respond the market signals of higher crop prices. Similar efforts were undertaken, unsuccessfully, in the face of high prices in 1996 and 2008. However, the current effort comes at a time of extreme budget pressure, which will make paring back the roughly $2 billion annual price tag of the program more attractive than usual.

The USDA often also grants waivers for haying and grazing on CRP land in regions affected by severe drought. Such a waiver was issued for Texas, Oklahoma, Colorado, New Mexico, and Kansas in August 2011 due to sustained drought conditions in that region.

The Wetlands Reserve Program –Established in the 1990 farm bill, the Wetlands Reserve Program (WRP) is aimed at keeping land classified as wetlands out of agricultural production. Wetlands are defined under the Clean Water Act as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Before the 1980s, when scientists and ecologists realized how crucial wetlands are to the nation's ecosystems—due to their role in filtering groundwater, mitigating floods, and supporting wildlife—farmers and others drained and cultivated almost 54 percent of U.S. wetlands. The WRP is implemented by the USDA's Natural Resources Conservation Service (NRCS). Like the Farm Service Agency, the NRCS has offices in nearly every county in the nation.

Whilethe CRP has a centralized decision-making process, the NRCS allocates funding for the WRP to state conservation directors and their staffs, who then determine how to select acres for the program. Wetland acres can be signed up for either permanent or 30-year easements that bar crop production on the land for the period of the contract. Farmers can also sign up for ten-year cost-share contracts to rehabilitate wetlands. Spending under the WRP is more concentrated than it is for the CRP—the top 10 percent of recipients accounted for 74 percent of payments between 1995 and 2009. The top ten states in terms of WRP enrollment, which are located primarily in the Midwest plus Kentucky, Mississippi, and California, received 61 percent of all payments.

For the 2008 farm bill, the CBO projected that the USDA would spend $1.3 billion over five years to expand WRP enrollment from 2 million to just over 3 million acres. In FY 2010, the NRCS entered into contracts for an additional 272,000 acres under the WRP, obligating $592 million for the lifetime of those agreements. There are now 2.45 million acres of wetland enrolled in this program. Once the enrollment cap of 3.04 million acres is reached, no additional acres will be enrolled until and unless the program is reauthorized in the upcoming farm bill.

Grassland Reserve Program – The Grassland Reserve Program (GRP) was established in the 2002 farm bill to provide incentives to owners of grassland, rangeland, or pastureland to restore or conserve that land under rental agreements or easements. The GRP was intended to be the land-retirement program for ranchers, whose land is generally not eligible for enrollment in either the CRP or the WRP.

Maximum enrollment in the GRP was set at 2 million acres in the 2002 farm bill and expanded to 3.22 million acres in the 2008 farm bill. Not more than 60 percent of the funds can be used to acquire permanent easements, with the remainder to be spent on rental agreements lasting ten to 20 years. Either type of GRP contract can also involve the restoration of grasslands, under which payments are made on a cost-share basis. Grazing and maintenance activities are allowed on land enrolled in the GRP, but not crop production. The GRP is jointly operated by the NRCS (on the easement side) and the FSA (on the rental contract side). The Secretary of Agriculture is authorized to transfer the right to hold

and enforce an easement under the GRP to a state agency or tax-exempt private organization.

The CBO projected that the expansion of the GRP in the 2008 farm bill would cost $300 million over five years. For FY 2011, $79 million has been provided to enroll an additional 245,000 acres. The number of farmers or other entities participating in this program, at less than 2,600 as of 2009, is far more modest than most other USDA farm and conservation programs. It is also among the most geographically diverse programs, with the top ten states in FY 2010 in terms of benefits being Texas, Colorado, Idaho, Kansas, Wyoming, Florida, Oklahoma, Montana, Tennessee, and Virginia. The top 10 percent of recipients accounted for 54 percent of payments between 2004 and 2008. As a consequence of the policy decision to cap acreage to ration participation (unlike most other mandatory conservation programs), neither the WRP nor the GRP has projected spending beyond FY 2012.

Farmland Protection Program – Various state and local governments, including King County, Washington, and the state of Pennsylvania, launched farmland protection programs during the 1980s. These programs were intended to protect farmland along the fringes of urban areas from being converted to residential or commercial uses. They accomplished this through the purchase of easements. A federal Farmland Protection Program (FPP) was established in the 1996 farm bill, though it received only modest funding of $35 million over five years. The FPP was designed to provide cost-share funding to local or state governments for the purchase of easements on between 170,000 and 340,000 acres of farmland that has prime, unique, or other productive soil or contains historical or archeological resources. The 2002 farm bill boosted total funding for the FPP to $500 million over five years and added nonprofit conservation organizations as eligible partners. The 2008 farm bill added $258 million more in budget authority. Through FY 2010, nearly 870,000 acres were enrolled in the FPP, with the highest enrollment levels in Wyoming, Colorado, Vermont, Montana, and Pennsylvania.

Working lands conservation programs

Survey data from the USDA's Natural Resources inventory found that, even though overall soil erosion had declined between 1982 and 1997 (due largely to conservation compliance rules and the strategic use of land retirement programs), more than 108 million acres of cropland were still experiencing excessive erosion.[51] These findings prompted closer public attention to the practices farmers were using on working farmland, and spurred increased investment in USDA programs focused on improving those practices. In addition to reducing soil erosion, these programs also focus on water and air quality, biodiversity, wildlife habitats, and carbon sequestration.

Actual annual resources spent on these programs do not necessarily match what was provided for them in farm bills, because of action taken by the Agricultural Appropriations Subcommittees in various fiscal years to cap spending on mandatory programs and use the unutilized spending authority to pay for discretionary programs under their jurisdiction. This practice, known on Capitol Hill as Changes in Mandatory Program Spending (CHIMPS), stems from authority that the Agricultural Appropriations Committee holds over all Agriculture Committee mandatory programs. This authority has been exercised primarily to cut or even eliminate spending for certain agricultural research, conservation, rural development, and renewable energy programs in recent years.

Environmental Quality Incentives Program – The Environmental Quality Incentives Program (EQIP) provides cost-share financial assistance and technical assistance to farmers to promote environmental quality on farmland still in production. EQIP was first established in the 1996 farm bill through the combination of a number of smaller programs. It received $130 million in funds in FY 1996 and $200 million annually between 1997 and 2001. Its scope was expanded in the 2002 farm bill, with annual funding starting at $545 million in FY 2003 and ramping up to $1.16 billion by FY 2007. The 2002 farm bill also mandated that at least 60 percent of EQIP cost-share and incentive funds be allocated to livestock operations,

primarily to improve the management of animal waste. This mandate was a legislative priority of the major livestock stakeholder groups, who saw EQIP as a means to help them meet emerging federal and state regulatory requirements. Funding for EQIP was boosted again in the 2008 farm bill, with budget authority under the program increasing by $3.4 billion over the ten-year period between 2008 and 2017 relative to what would have been provided by the 2002 farm bill over the same period. Annual funding is allocated to each state, and decisions on which projects to fund are made at the state level by the state conservationist. Under normal circumstances, participants may not receive more than $300,000 in total payments under EQIP over a six-year period.

A significant share of funds under EQIP are devoted to two major subcomponents. The first is conservation innovation grants, which are available to persons or entities on a competitive basis who wish to develop new mechanisms to encourage pollution reduction or innovative conservation practices, including the storage of carbon in the soil, along the lines of the very successful sulfur dioxide permit trading system developed to implement sulfur emissions required under the Clean Air Act. The second is the agricultural water enhancement program, which is focused exclusively on enhancing water quality and improving water conservation on working farmland. This subprogram is available both to individual farmers and to partnership organizations on a regional level, and has separate funding within EQIP authorized at $74 million for FY 2011 and $60 million for FY 2012 and subsequent years. Through FY 2009, the NRCS has distributed $4.05 billion under the EQIP program, with the top 10 percent of recipients capturing 52 percent of all benefits. Among states, about 40 percent of funds go to farmers in the top ten states, located exclusively in the West and Midwest. There are currently nearly 25,000 active EQIP contracts on 7.5 million acres.

Conservation Stewardship Program – The Conservation Stewardship Program (CSP) is the second-largest working lands program operated by the USDA. In contrast to EQIP, which focuses on individual practices, the CSP is designed to reward farmers' overall conservation performance across entire operations, including the adoption of new conservation practices and the improvement and maintenance of existing conservation practices. Participating farmers must already be at sustainable conserving levels for a given resource concern in order to qualify. For example, a California organic walnut farmer had already implemented several water-conserving irrigation practices under EQIP contracts, but was awarded CSP funds because of many uncompensated practices he had adopted, such as putting in sediment traps and tail water ponds to improve water quality for himself and his neighbors.[52]

This program was a top priority of Senator Tom Harkin (D-Iowa), who chaired the Senate Agriculture Committee during the 2002 and 2008 farm bills. An earlier version, the Conservation Security Program, was established in the 2002 farm bill; this was an open-ended program with a three-tier structure, each tier including specified practices or combinations of practices.[53] As the tier level increased, the comprehensiveness of practices adopted would increase, as would payment levels. At the time the 2002 farm bill was enacted, the CBO projected the ten-year score for this program at $2 billion. As the USDA began to write the rules to implement it, they realized that it would be far more lucrative and thus more attractive to farmers than originally anticipated, and the estimated long-term cost estimates for the program increased considerably as a result. Even with the NRCS restricting participation by limiting it to certain watersheds in a given sign-up, and the Agricultural Appropriations Committee capping spending to pay for agricultural disaster programs, the CBO adjusted upwards its projected ten-year cost for the program to $7.9 billion after seeing how it was being implemented.

In the 2008 farm bill, the program was renamed as the Conservation Stewardship Program, with the following key requirements: farmers can participate only if they are already meeting a specified level of conservation for a key natural resource area, such as water quality or soil erosion, and if they agree to maintain existing conservation practices as well as add new ones. The tier

system was eliminated, and program costs were to be controlled by implementing an annual acreage cap and a requirement that the national average payment rate not exceed $18 per acre. Unlike the previous version as administered, sign-ups under the new version are available nationwide for five-year contracts. Contracts entered into under the previous version will continue, but could not be renewed or new contracts entered after the beginning of FY 2009. The new version received additional funding in the 2008 farm bill in the amount of $1.1 billion over ten years.

Payments made under the earlier version of the CSP between FY 2005 and FY 2009 totaled $1.2 billion, with the top 10 percent of participants receiving 37 percent of all benefits. Farmers in the top ten states accounted for 60 percent of all payments, located mainly in the Midwest and West. The CBO estimates that $688 million will be paid out under the program in FY 2011, for both existing contracts under the old version and new contracts under the new version. There are 17.5 million acres cumulatively under contract for the old CSP, and the FY 2010 sign-up for the new CSP yielded contracts on 25.1 million acres. The FY 2011 sign-up period has closed but contracts have not yet been announced.

Wildlife Habitat Incentive Program – The Wildlife Habitat Incentives Program (WHIP) was established under the 1996 farm bill and is designed to provide cost-share payments to farmers who voluntarily develop habitat for wildlife of all types, especially threatened and endangered species, on their farm operations. It was initially provided mandatory funding of $50 million annually. Funding ramping from $30 million in FY 2003 to $85 million in FY 2007 was provided under the 2002 farm bill, with the $85 million funding level maintained under the 2008 farm bill.

The top 10 percent of participants received 53 percent of funds under WHIP between 2005 and 2009. (The Environmental Working Group database did not display payment data from earlier years.) Recipients were located in quite diverse geographic regions, with the top ten states accounting for only 31 percent of all benefits, located in every region of the country except the Northeast. The CBO projects that the USDA will distribute $69 million under WHIP in FY 2011. An average of 870,000 acres has been enrolled in WHIP in the last three fiscal years.

Other conservation programs

The USDA operates a number of other smaller conservation programs, most of which are focused primarily on a particular region of the country. Most of these programs provide financial assistance (on a cost-share basis) and technical assistance for the same types of activities and practices addressed by the major programs, but the regions' Congressional delegations were able to wield enough influence to get regionally targeted programs enacted into law. This approach enables them to provide priority access for their farmers to such assistance, as opposed to having to compete on an equal basis in the nationallybased programs.

Agricultural Management Assistance Program – The Agricultural Management Assistance (AMA) Program has one of the odder pedigrees among USDA programs. It was established as part of the Agricultural Risk Protection Act of 2000, the last major piece of crop insurance legislation, as part of a deal to placate members of Congress from parts of the country where crop insurance is not particularly popular. It provided $10 million annually in mandatory funds to such "underserved" states, to be used to fund cost-share assistance for conservation practices such as watershed management, windbreaks, and the adoption of integrated pest management or organic practices, as well as alternative risk management practices such as hedging or options contracts. Funding for the AMA was increased to $20 million annually in the 2002 farm bill, and reduced to $15 million annually under the 2008 farm bill. It is managed jointly by three USDA agencies—the NRCS for conservation activities, the Risk Management Agency for risk management activities, and the Agricultural Marketing Service for organic practices. AMA funds are available only in named states in the Northeast and the West, along with West Virginia.

Desert Terminal Lakes – The Desert Terminal Lakes program was provided funding in both the 2002 and 2008 farm bills. It is designed to assist in the preservation of desert terminal lakes in the West by allocating funds to the Secretary of the Interior to purchase or lease water rights, with flows to be diverted into those lakes. This program received $200 million in the 2002 farm bill and $175 million in the 2008 farm bill. The program was included at the behest of Senator Harry Reid (D-Nev.), Democratic leader of the U.S. Senate.

Small Watershed Rehabilitation Program – This program is targeted at rehabilitating around 11,000 small-scale dams, designed for local water and flood control, that have been built over the years in 47 states (and Puerto Rico) with NRCS funds and technical assistance. Some structures have been in place since 1948 and are nearing the end of their design life. This program was first authorized in 2000 when it was tacked onto the U.S. Grain Standards and Warehouse Improvement Act, with $90 million for FY 2001–2005 authorized but subject to annual appropriations. In the 2002 farm bill the program was provided with mandatory funding of $275 million over five years, with authority to seek additional funding through the annual appropriations process, which yielded another $120 million for FY 2003–2006. An additional $100 million over five years in mandatory funds was provided in the 2008 farm bill. The federal government covers 65 percent of the cost of the rehabilitation projects, with state or local partners responsible for the remaining 35 percent. In FY 2010, the NRCS provided funds under this program for the repair or removal of 25 unsafe dams.[54]

Chesapeake Bay Watershed Program – The Chesapeake Bay Watershed Program, established in the 2008 farm bill, provides special consideration to farmers operating within the watersheds of major rivers feeding into the Chesapeake Bay for access to financial assistance and technical assistance under the working lands programs described previously. The legislation provides separate funding to enable this priority access, in the amount of $432 million in mandatory funds over ten years. Enacting this targeted program was likely made easier by the fact that the Washington, DC, area falls within the Chesapeake Bay watershed, and residents are conscious of the role that agriculture has played in the longstanding water pollution problems of the region. A similar program targeted at the Chesapeake region was included in the 2002 farm bill (the Conservation Corridor Demonstration Program); however, it was subject to the annual appropriations process, and no money was ever appropriated.

Great Lakes Basin Program– The Great Lakes Basin Program was established in 1990 and originally received funding through the Environmental Protection Agency. The funding switched to the NCRS in 1994.[55] The program first received formal legislative authorization in the 2002 farm bill. It is intended to provide financial assistance to producers within the Great Lakes region, to help address problems with soil erosion and sediment control.[56] States eligible for funds include Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. The program has never received mandatory funding, but was authorized appropriations of $5 million annually in the 2008 farm bill.

Voluntary Public Access and Habitat Incentive Program – This program was established in the 2008 farm bill to encourage farmers to allow hunting and fishing by members of the public on otherwise inaccessible parts of their operations with appropriate wildlife habitat. It was provided with $50 million in mandatory funding over the lifetime of the legislation. The first grants were awarded under this program under a competitive process in October 2010 to state and tribal government agencies in 17 states. A total of nearly $12 million was awarded, mostly to states in the Midwest and West. The grants ranged in size from $84,000 for Utah to $1.5 million for Pennsylvania.

Forestry programs

About 430 million acres of forest land in the United States are privately owned, with ownership distributed among about 10 million individuals and entities. Most commercial logging operations take place on such land. To the extent that the owners of such land receive

benefits from the U.S. government to encourage specific activities or practices, they are largely implemented through the federal tax code.[57] Since such policies involve revenue impacts, they fall outside the jurisdiction of the House and Senate Agriculture Committees. However, a handful of direct incentive programs are operated by various USDA agencies.

Healthy Forest Reserve Program – The Healthy Forest Reserve Program, established in the Healthy Forest Restoration Act of 2003, was designed to help reduce the risk of wildfires by thinning dense undergrowth and brush in forested areas. It provides assistance to owners of private forest lands to address the following objectives: 1) promote the recovery of endangered and threatened species under the Endangered Species Act; 2) improve plant and animal biodiversity; and 3) enhance carbon sequestration. The assistance can take the form of ten-year cost-share agreements or 30-year or permanent easements. The program was reauthorized in the 2008 farm bill and provided with $39 million in mandatory funds for the lifetime of the legislation. About 690,000 acres have been enrolled in this program through FY 2010 in the states of Maine, Mississippi, and Arkansas. The program is delivered by the NRCS.

Forest Stewardship Program – The Forest Stewardship Program was established under the authority of the Cooperative Forestry Assistance Act of 1978 and has been used to provide technical assistance to nonindustrial private forest owners to encourage and enable active long-term forest management. It is managed by the USDA's Forest Service and operated at the state level with the assistance of state forestry agency partners. The authorizing legislation was amended in the 2008 farm bill to add new priorities for the operation of the program, including protecting forests from threats stemming from natural disasters and commercial development, as well as enhancing public benefits from private forests. The program is authorized appropriations of up to $10 million annually.

Additional Authorities and Border Measures

In addition to all of the specifically authorized and funded farm, loan, and conservation programs described in this paper, the Secretary of Agriculture has broad authority from two statutes to provide assistance under situations not covered with a formal program. These authorities have existed for several decades, but their use has become more circumscribed in recent years due to the emergence of specific authorities in legislation that supersede them, and also because both Congress and officials at the Office of Management and Budget (OMB), which oversee the budgetary functions of the Executive Branch, have put restrictions in place.

Access to the U.S. agricultural market is relatively open compared to other parts of the world—the average U.S. MFN (most-favored-nation) tariff on agricultural products is about 12 percent, while the global average is 62 percent.[58] However, a couple of major U.S. agricultural sectors still rely on price support systems rather than income support, and price supports often cannot function efficiently in an open-border situation.

Commodity Credit Corporation Charter Act

The Commodity Credit Corporation Charter Act of 1948 established the Commodity Credit Corporation as a federal corporation for "the purpose of stabilizing, supporting, and protecting farm income and prices, [and] of assisting in the maintenance of balanced and adequate supplies of agricultural commodities, products thereof, foods, feeds, and fibers." The funding for most mandatory USDA programs flows through the CCC.[59] The Act also provides specific powers to the Secretary of Agriculture to undertake activities in order to:[60]

- Support the prices of agricultural commodities (other than tobacco) through loans, purchases, payments, and other operations;
- Make available materials and facilities required in connection with the production and marketing of agricultural commodities (other than tobacco);

- Procure agricultural commodities (other than tobacco) for sale to other government agencies, foreign governments, and domestic, foreign, or international relief or rehabilitation agencies, and to meet domestic requirements;
- Remove and dispose of or aid in the removal or disposition of surplus agricultural commodities (other than tobacco);
- Increase the domestic consumption of agricultural commodities (other than tobacco) by expanding or aiding in the expansion of domestic markets or by developing or aiding in the development of new and additional markets, marketing facilities, and uses for such commodities;
- Export or cause to be exported, or aid in the development of foreign markets for, agricultural commodities (other than tobacco) (including fish and fish products, without regard to whether such fish are harvested in aquacultural operations);
- Carry out conservation or environmental programs authorized by law, and
- Carry out such other operations as the Congress may specifically authorize or provide for.

Over the years, CCC Charter Act authority has been used to fund a number of programs not specifically authorized in legislation. For example, the CCC bio-energy program described earlier was first operated under CCC Charter Act authority beginning in 1999, before receiving permanent authorization under the 2002 farm bill. Similarly, the Secretary used this authority in 2003 to release nonfat dry milk powder held in CCC inventories provide it as a feed supplement to livestock producers in certain drought-stricken states.[61] The most recent unorthodox use of CCC Charter Act authority was the 2009 decision by Agriculture Secretary Vilsack to allocate $147 million annually to provide technical assistance to Brazilian cotton producers as part of the framework agreement between the U.S. and Brazilian governments made in response to the findings of the WTO dispute settlement panel on the Brazil cotton case. However, executive branch rules established by OMB during the Bush Administration (and continued by the Obama Administration) that agencies provide administrative offsets—i.e., cuts within their own programs to fund new initiatives not specifically created by Congress—has constrained the use of this authority.

Section 32 of the Act of Aug. 24, 1935

The first major piece of agricultural legislation was the Agricultural Adjustment Act of 1933. That seminal law was amended two years later to permanently appropriate 30 percent of annual gross customs receipts (from the collection of import duties) for the use of the Secretary of Agriculture to promote food consumption, reduce agricultural surpluses, and provide for the food needs of low-income populations. This provision has become known as Section 32 authority. While the majority of Section 32 funds have been used over the years to purchase commodities for the use of school lunch programs and other institutional outlets such as food banks and soup kitchens, the authority to "re-establish farmers' purchasing power" has also been used to provide ad hoc assistance to farmers and ranchers. For example, $54 million was used in 1999 to help small-scale hog farmers facing rock-bottom prices, $700 million was allocated to Florida crop producers harmed by hurricanes in 2005, and $550 million was used to provide ad hoc disaster assistance for 2009 crop losses, primarily in the South.[62] The Secretary's discretion in the use of Section 32 funds was restricted by a provision of the 2008 farm bill, which mandated minimum purchase levels for school-related nutrition programs and rescinded a portion of funds that would otherwise have been available for other purposes under the authority.

Import protection measures

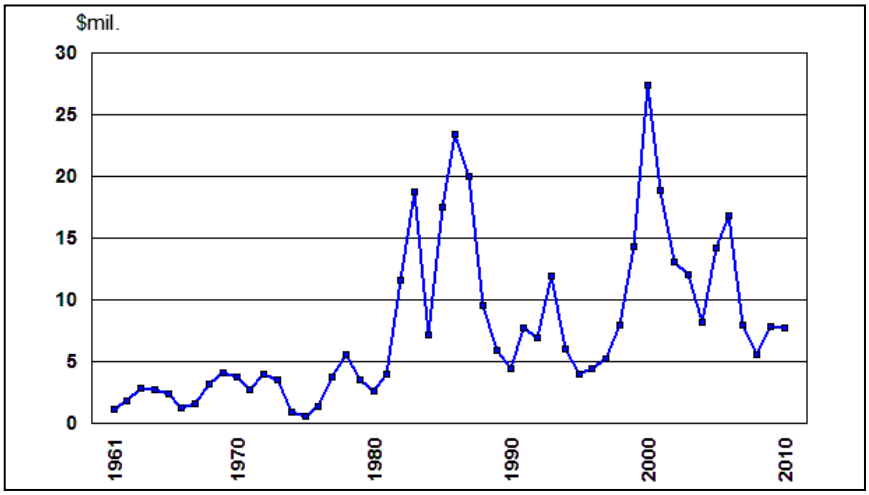
Sugar Tariff Rate Quotas – Border protection against imported sugar has been in place for more than two centuries, beginning in 1789.[63] That protection took the form of a flat tariff until 1934, when it was converted into a quota system in the Sugar Act, with specified quota amounts provided to those countries with a record of exporting sugar to the United States. After the U.S. government ratified the Uruguay Round Agreement in 1994, it had to convert the quota system into a tariff rate quota system (TRQ), in which quota holders pay a low duty of $0.0062/lb., while out-of-quota imports face

a tariff of $0.1536/lb. for raw sugar and $0.162/lb. for refined sugar—normally prohibitive levels. The United States agreed to allow a minimum of 1.139 million tons of imports annually under the MFN system, with TRQ amounts allocated to 40 different countries, although the Secretary of Agriculture has the authority to adjust TRQs upward if the United States is facing a short supply situation. Additional imports also come from other countries with free-trade agreements with the United States, such as Mexico (unlimited access) and the CAFTA countries (with access governed by country-specific TRQs).

Dairy TRQs – As with sugar, the U.S. government maintains significant border protection against imported dairy products, to protect the operation of the dairy price-support system. Import quotas on dairy products were first authorized under the Agricultural Adjustment Act of 1933, but not imposed until 1951 when improved transportation and refrigeration technology made imports more competitive. The quotas, primarily placed on cheese, butter, and condensed and evaporated dairy products, were converted to TRQs in 1995. In-quota tariff rates range between 10 and 16 percent, and out-of-quota rates are between 60 and 65 percent, varying by line item. In 2007, about 51 percent of all dairy products imported into the United States, such as whey and milk protein concentrates, were not covered by TRQs. As U.S. and world prices for dairy products have converged in recent years, the U.S. dairy industry has become more interested in the world market and increasing exports, but they are not yet willing to give up their current border protection unilaterally.

Ethanol Tariff – A$0.54/gallon tariff was placed on imported ethanol in 1980, to offset the benefit that such products would gain in the U.S. market, since the eligibility for the ethanol tax credit does not differentiate between domestic and imported ethanol.[64] That tariff has remained in place since that time, although provisions of the Caribbean Basin Initiative (CBI), a trade-preference arrangement between the United States and countries in the Caribbean region, allow duty-free access to ethanol imports up to 7 percent of U.S. ethanol consumption. No ethanol production facilities are operated in CBI countries, but relatively loose country-of-origin rules under the CBI that apply to ethanol allow this access to extend to ethanol that is imported from non-CBI countries (particularly Brazil) into CBI countries, reprocessed by removing water from the shipment, then re-exported duty-free to the United States. About 350 million gallons of Brazilian ethanol came through the CBI channel in 2008, but the import volume has declined over the past few years as Brazil has consumed a growing share of their ethanol production domestically. In fact, U.S. exports of ethanol have exceeded imports since 2009.

Figure 10| Total Farm Support Spending, 1961-2010



SOURCE: CCC History of Net Budget Expenditures

Distribution of Benefits

Since 1961, the Commodity Credit Corporation has paid out more than $385 billion in farm support payments to U.S. farmers, with the bulk of payments going to a relatively small share of producers. The aggregate amount paid out per year has varied considerably, depending both on the prevailing commodity price environment and the mixture of farm programs in place at the time (Figure 10). Over that period, total annual

payments ranged from about $1.2 billion in 1961 to more than $27 billion in 2000.

The distribution of payments provided by these programs is skewed even more dramatically than ownership of the land is, because the payments go almost exclusively to producers of the major row crops, which now account for less than one-third of total U.S. farm receipts. In 2007, only 9 percent of all farms generated annual sales revenue greater than $250,000, but they generated 85 percent of all market receipts and accounted for 57 percent of all farm support payments received. By contrast, 57 percent of all farms had $10,000 or less in sales receipts, and accounted for only 7 percent of all payments.[65] For small farms, government payments are likelier to come from conservation programs like the CRP than the traditional safety net programs.

With respect to individual programs, the benefits are more highly concentrated for the largest producers participating in the commodity support programs such

Table 2 | Summary of Major Farm Programs

Program Title	Objective	Share of payments to top 10%	Share of payments to bottom 80%
Marketing assistance loan	Income support	60 percent	19 percent
Countercyclical payment	Partially decoupled income support	76 percent	11 percent
Average Crop Revenue Election	Revenue support	50 percent	31 percent
Direct payment	Decoupled income support	67 percent	15 percent
Sugar loan and allotments	Price support	Not applicable	Not applicable
Dairy price support	Price support	Not applicable	Not applicable
Milk Income Loss Contract	Income support	50 percent	28 percent
Crop insurance	Insure against crop losses	Not available	Not available
Supplemental Revenue Assurance	Insure against crop revenue losses	45 percent	34 percent
Direct and guaranteed loans	Provide operating and capital loans	Not applicable	Not applicable
Conservation Reserve Program	Idle erodiblelands	58 percent	25 percent
Environmental Quality IncentiveProgram	Help adoption of conserving practices	40 percent	31 percent
Conservation Stewardship Program	Help adoption of conserving practices	37 percent	41 percent

Note: Concentration of payments data available on EWG website:http://farm.ewg.org/. See Glossary for description of programs.

as the Countercyclical Payment Program (where the top 10 percent receive 76 percent of benefits) and the Direct Payment Program (where the top 10 percent receive 67 percent of benefits), as opposed to the conservation programs, where the top 10 percent get between 50 percent (for the CRP) and 47 percent (for the CSP). (Table 2). Program benefits are also heavily concentrated among states, with farmers in the Midwest and Great Plains collecting the largest amounts from the direct payment program and insuring the most acres under the federal crop insurance program (Figures 11 and 12).

Figure 11 | Direct Payments by State, 2009

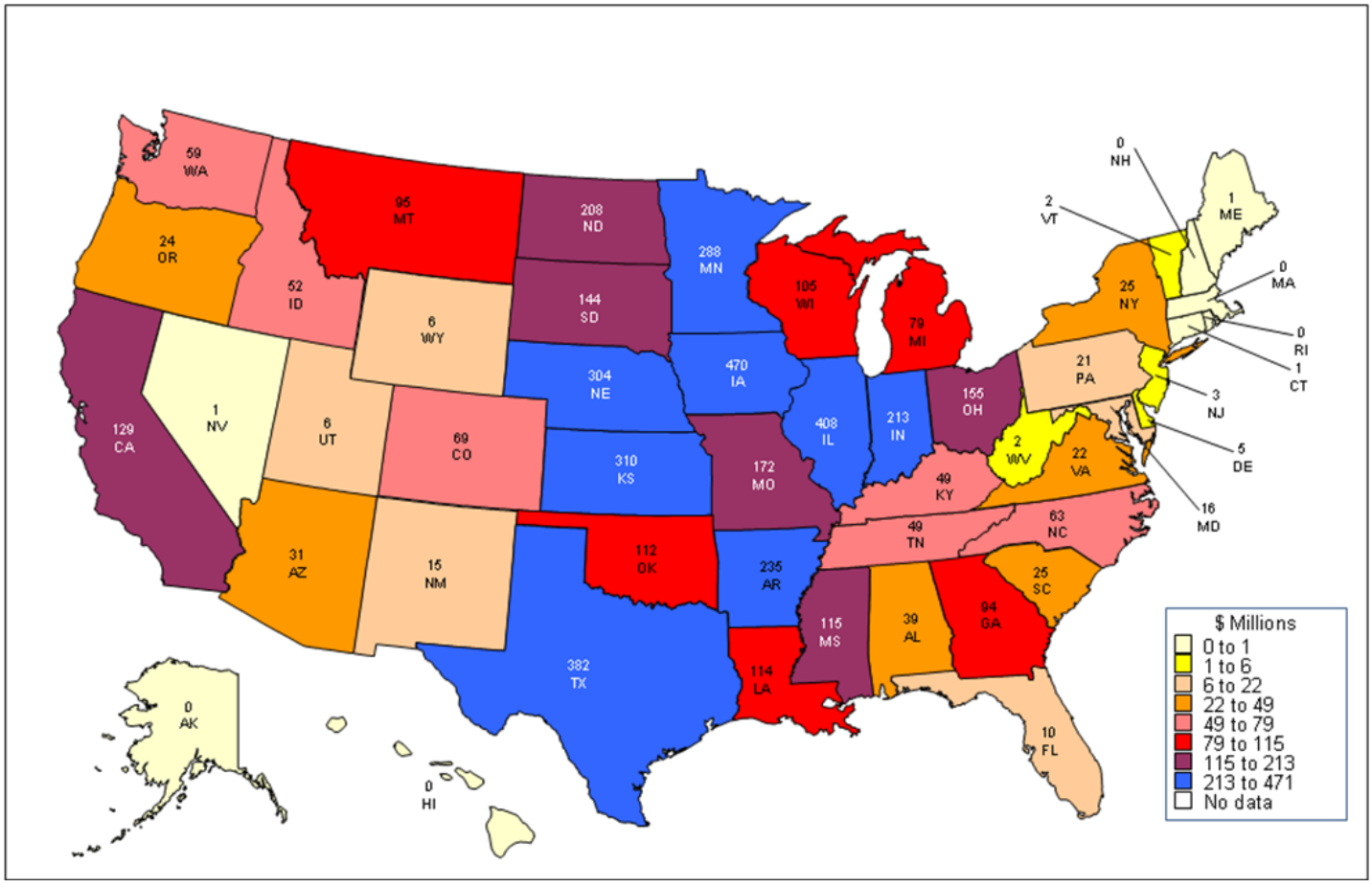
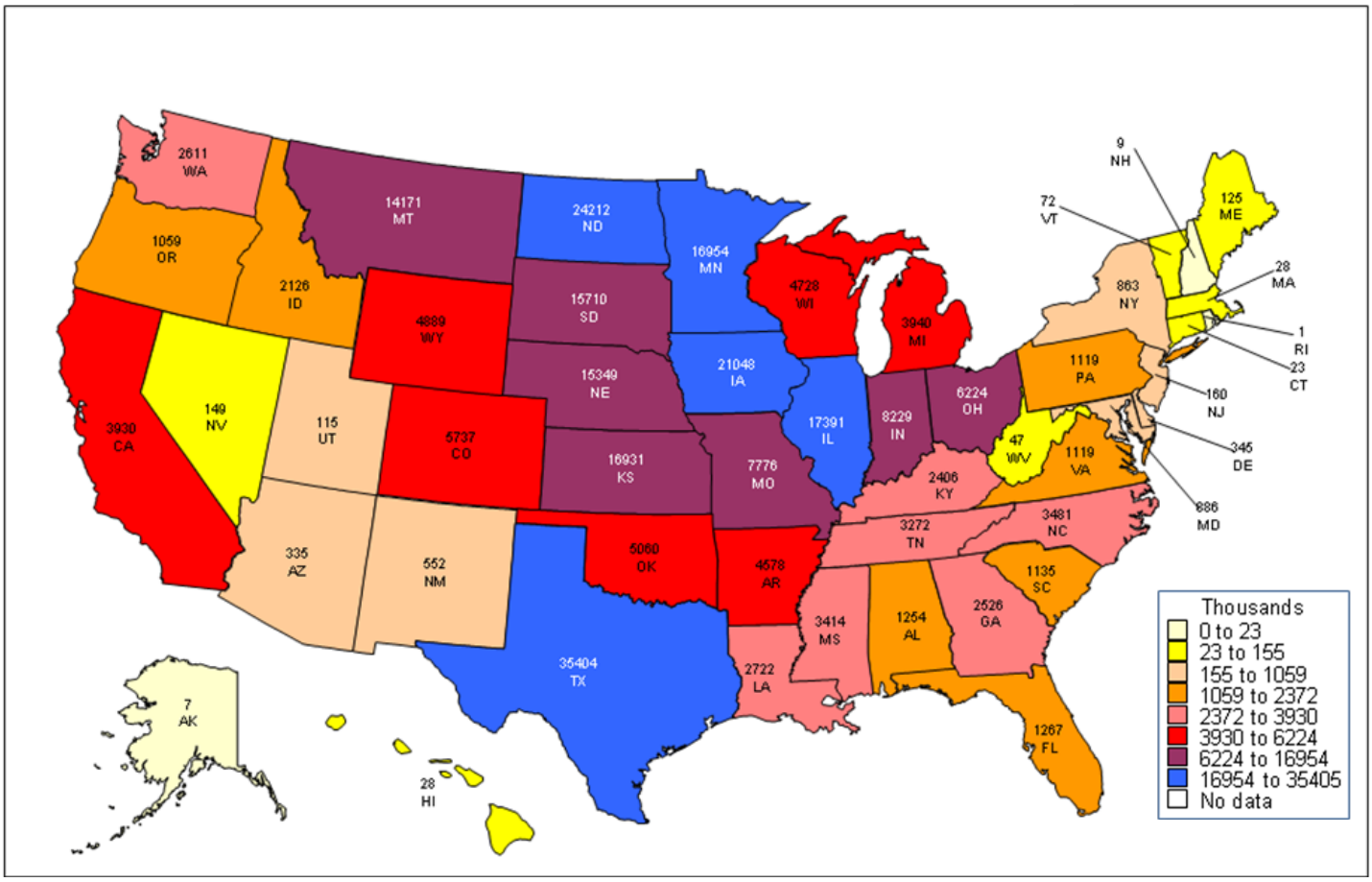


Figure 12 | Acres Insured by State, 2009



Glossary of Key Agricultural Policies and Programs

Note: Most definitions are drawn from farm bill and WTO glossaries provided on the website of the USDA's Economic Research Service (http://www.ers.usda.gov/briefing/farmpolicy/glossary.htm#s)

Area-based insurance – Crop yield or revenue insurance coverage based on county-level yield or revenue.

Average Crop Revenue Election (ACRE) – An optional state revenue-based program provision introduced in the 2008 farm legislation that replaces countercyclical payments for those producers who elect to participate in ACRE. Once producers elect to participate, participation continues until 2012. Producers continue to receive reduced direct payments and are eligible for reduced loan deficiency payments.

Conservation compliance – Requires producers who cropped highly erodible land before December 23, 1985, to implement a soil conservation plan or risk losing their federal farm program benefits, including most commodity, conservation, and disaster payments. Conservation compliance requirements are similar to those of the Sodbuster requirements, (compliance on newly planted land) but tend to be less stringent.

Conservation programs – Programs that provide cash incentives for farmers to either retire environmentally sensitive farmland for a specific period or encourage the adoption of new practices on farmland that help to better preserve aspects of the natural environment, such as water and air quality. Most such programs require farmers to cover a portion of the cost of the new practices.

Conservation Reserve Program (CRP) – The latest version of long-term land retirement programs used in the 1930s and 1960s. Established in 1985 and administered by the USDA's Farm Service Agency, the CRP provides farm owners or operators with an annual per-acre rental payment and half the cost of establishing a permanent land cover, in exchange for retiring environmentally sensitive cropland from production for ten to 15 years. Producers can offer land for competitive bidding based on an Environmental Benefits Index during periodic signups or automatically enroll more limited acreages in such practices as riparian buffers, field windbreaks, and grass strips on a continuous basis. The CRP is funded through the Commodity Credit Corporation.

Conservation Stewardship Program (CSP) – Established in the 2008 farm bill, provides payments to producers for adopting or maintaining a wide range of conservation management and land-based structural practices that address 1 or more resources of concern, such as soil, water, and wildlife habitat.

Countercyclical Payment (CCP) Program – Payments available to producers with historic program payment acres and yields of wheat, corn, barley, grain sorghum, oats, upland cotton, long-grain and medium-grain rice, soybeans, other oilseeds, peanuts, and pulse crops (dry peas, lentils, and small and large chickpeas). Payments are made whenever the current effective commodity price is less than the target price. The effective price is calculated by adding: 1) the national average farm price for the marketing year, or the commodity national loan rate, whichever is higher and 2) the direct payment rate for the commodity. Target prices, loan rates, and direct payment rates are all established by statute.

Decoupled payment – Payments to farmers that are not linked to current levels of production, prices, or resource use. When payments are decoupled, farmers make production decisions based on expected market returns. Under the WTO Agreement on Agriculture, for policies to be considered decoupled, no production shall be required in order for producers to receive the payment. Direct payments provided to U.S. farmers are an example of a decoupled payment.

Direct Payment Program – Fixed payments for eligible historic production of wheat, corn, barley, grain

sorghum, oats, upland cotton, long- and medium-grain rice, soybeans, other oilseeds, and peanuts. Producers enroll in the program annually to receive payments based on payment rates specified in the farm bill and their historic program payment acres and yields.

Doha Round of trade negotiations – A multilateral effort to negotiate further trade liberalization under the auspices of the World Trade Organization. The Doha Round was launched in December 2001 and has not yet been completed. The Round is formally designated as the Doha Development Agenda (DDA).

Environmental Quality Incentives Program (EQIP) – Established by the 1996 Farm Act to consolidate and better target the functions of the Agricultural Conservation Program, Water Quality Incentives Program, Great Plains Conservation Program, and Colorado River Basin Salinity Program. The objective of EQIP is to encourage farmers and ranchers to adopt practices that reduce environmental and resource problems through one- to ten-year contracts. The program provides education and technical assistance, as well as financial assistance through cost-share payments for structural and vegetative practices and incentive payments for management practices.

Federal Crop Insurance Program – A subsidized, multi-peril federal insurance program, which provides protection against losses due to natural causes and is administered by the USDA's Risk Management Agency. Federal crop insurance, which is available to most farmers, is sold and serviced through private insurance companies. The federal government subsidizes a portion of the premium, as well as some administrative and operating expenses of the private companies. The Federal Crop Insurance Corporation reinsures the crop insurance companies by absorbing the losses of the program when indemnities exceed total premiums. Various types of yield and revenue insurance products are available for major crops.

Green box programs – Domestic or trade policies that are deemed to be minimally trade distorting and that are excluded from domestic support reduction commitments in the WTO's Uruguay Round Agreement on Agriculture. Examples include domestic policies dealing with research, extension, inspection and grading, environmental and conservation programs, disaster relief, crop insurance, domestic food assistance, food security stocks, structural adjustment programs, and direct payments not linked to production.

Index-based insurance – A form of insurance that uses measurable events affecting regions to proxy losses from drought, floods, or other natural disasters. This type of coverage pays out when an objective target is met, regardless of the loss to the particular individual.

Marketing Assistance Loan Program – Provisions that allow producers to repay nonrecourse commodity loans at less than the announced loan rate whenever the world price or loan repayment rate for the commodity is less than the loan rate. Marketing loan provisions are aimed at reducing government costs of stock accumulation. Marketing loan provisions were originally mandated only for rice and upland cotton. They are now implemented for feed grains, wheat, rice, upland cotton, all oilseeds, peanuts, small and large chickpeas, lentils, dry beans, wool, mohair, and honey.

Program crops – Crops for which federal support programs are available to producers, including wheat, corn, barley, grain sorghum, oats, extra-long staple and upland cotton, rice, oilseeds, peanuts, and sugar.

Revenue insurance – An insurance policy offered to farmers that pays indemnities based on revenue shortfalls. These programs are subsidized and reinsured by the USDA's Risk Management Agency. This type of coverage was first offered in 1996 as a pilot program.

Specialty crops – Fruits, vegetables, tree nuts, dried fruits, nursery crops, and floriculture. Also referred to as horticultural crops.

Supplemental Revenue Assistance (SURE) Payments – Payments made to eligible producers on farms in disaster counties that incurred crop production

or crop quality losses (or both) during the crop year, such that they have suffered a decline in average crop revenue.

World Trade Organization (WTO) – An international organization established by the Uruguay Round trade agreement to replace the institution created by the General Agreement on Tariffs and Trade, or GATT. The Uruguay Round trade agreement modified the code and the framework and established the WTO on January 1, 1995. The WTO provides a code of conduct for international commerce and a framework for periodic multilateral negotiations on trade liberalization and expansion.

Endnotes

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[11] S. Mercier, *Corn: Background for 1990 Farm Legislation,* Staff Report No. AGES-8947(Washington, DC: USDA Economic Research Service, Sept. 1989).

[12]H.F. Gale, "Econometric Analysis of Farmer Participation in the Dairy Termination Program in North Carolina and Virginia," *Southern Journal of Agricultural Economics* 22, no. 1 (1990): 123-31.

[13]C. Dimitri, A. Efflund, and N. Conklin, "The 20th Century Transformation of U.S. Agriculture and Farm Policy,"*Economic Information Bulletin* No. 3, USDA Economic Research Service, June 2005.

[14]*Mandatory programs* are funded directly under the authority of the Committees of jurisdiction, and funding is provided for the lifetime of the legislation that includes them, in this case the farm bills.Mandatory farm bill programs primarily address farm support, nutrition, conservation, trade, and renewable energy.The federal crop insurance and standing disaster programs are also mandatory, although not funded through the CCC.Other programs are authorized by the Agriculture Committees in farm bills, such as research and rural development, but funded on an annual basis through the appropriations process.These are known as *discretionary programs*.

[15] Environmental Working Group, *Farm Subsidy Database*. Accessed May 26, 2011, http://farm.ewg.org/.

[16]Cwt=hundredweight (100 pounds)

[17]J.C. Beghin, et al., *The Cost of the U.S. Sugar Program Revisited,* Working Paper No.01-WP-273 (Ames, IA: Center for Agricultural and Rural Development, March 2001).

[18] Upland cotton is the dominant cotton type grown in the United States, accounting for 98 percent of production in 2010.A minor type, extra-long staple (ELS) cotton is grown primarily in Southwestern states.The programs for ELS are largely the same as for upland cotton, except that they retain the competitiveness provisions eliminated in 2006 for upland cotton, as ELS was not included in the Brazil cotton case.

[19] This program was "paid for" by the cotton sector when they agreed to a modest (1.5 percent) reduction in the target price for upland cotton as part of the 2008 farm bill.

[20]W.W. Linand G. Vocke, *Hard White Wheat at a Crossroads*, Outlook Report No. WHS04K01 (Washington, DC: USDA Economic Research Service, Dec. 2004).

[21]R. Wardand T. Sayler, *U.S. Wheat and Barley Scab Initiative: An Unprecedented University, Government, and Industry Collaboration Focused on Accelerated Research of a Serious Cereal Disease Problem*, paper presented at the International Symposium on Wheat Improvement for Scab Resistance, Nanjing, China, 2000. Accessed May 28, 2011,http://www.scabusa.org/pdfs/China_Symposium.PDF.

[22]E. Brown and M. Jacobson, *Cruel Oil: How Palm Oil Harms Health, Rain Forests, and Wildlife* (Washington, DC: Center for Science in the Public Interest, May 2005). Accessed May 28, 2011, http://www.cspinet.org/new/pdf/palm_oil_final_5-27-05.pdf.

[23] The U.S. government reports direct payments as a "green box" program. In the Brazil cotton case, however, the dispute settlement panel's findings raised questions about the green box status of this program, because it imposes restrictions on program participants' ability to plant fruits and vegetables on program acres. That finding did not directly challenge the U.S. classification of the program, but made it vulnerable to future challenges under the WTO dispute settlement process.

[24]USDA Economic Research Service, *Farm Income and Costs: 2011 Farm Sector Income Forecast*. Accessed May 28, 2011, http://www.ers.usda.gov/Briefing/FarmIncome/nationalestimates.htm.

[25] The Farm Service Agency has authority to sell CAT policies in regions "not adequately served by Approved Insurance Providers," but USDA officials indicate that such sales have not occurred since 1997.

[26] For the purposes of projecting crop insurance costs, the CBO is required to assume that the loss ratio will be 1.0 (i.e., total indemnities equal to total premiums) in future years.Realized costs will vary depending on the level of losses that occur in a given year.

[27] Congress chose to establish a lower administrative fee for NAP policies than for CAT policies because those farmers do not have the alternative of acquiring buy-up coverage for the crop in question.

[28]J. Nwoha, et al., *FarmService Agency Direct Farm Loan Effectiveness Study,* Research Report 977 (Fayetteville, AK: University of Arkansas, December 2005).

[29] Center for Rural Affairs, *USDA Farm Service Agency: Beginning Farmer Loan Programs*. Accessed May 5, 2011, http://www.cfra.org/resources/Publications/Beg_Farmer_loan_programs.htm.

[30]In general, Congressional budget rules require that funding for mandatory farm programs that are expected to continue indefinitely be allocated for a ten-year period, even if the farm bill itself expires in a shorter period. Funding for the years beyond the expiration of the farm bill are known as `out-year funding'.

[31]J. Noeland D. Schweikardt, *Devolution of Federal Agricultural Policy: The Case of Specialty Crop Block Grants*. Accessed May 28, 2011, http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1039&context=agb_fac&sei-redir=1#search="specialty+crop+block+grants+history".

[32] For the purpose of this program, the word *state* is defined to include the District of Columbia, Puerto Rico, the Virgin Islands, and other U.S. territories and possessions.

[33]Agri-Pulse, *With U.S. Food Sales Up 1%, Organic Sales Surge 7.7% to Over $28 Billion for 2010*. Accessed April 21, 2011, http://www.agri-pulse.com/Organic_Industry_Survey_04212011.asp?sms_ss=twitter&at_xt=4db09f8027357132,0.

[34] This estimate by the USDA accounts for the bulk corn purchased by the ethanol industry for its use, but does not deduct out the byproducts left over after the starch is converted into ethanol. Those byproducts consist primarily of protein and roughage, and can be used as animal feed.The ethanol industry has urged the USDA to take these deductions into account when calculating the share of the corn crop devoted to ethanol demand.

[35] With current production practices, ethanol processors use only the starch portion of the corn germ, leaving the remaining protein and fiber to be incorporated into byproduct feeds such as corn gluten meal and feed (from corn wet-milling) and distillers' dried grain (from corn dry-milling).

[36]R. Schnepf, *Agriculture-Based Bio-Fuels: Overview and Emerging Issues*, RL-41482 (Washington, DC: Congressional Research Service, January 2011).

[37] The blender's excise tax credit is formally known as the Volumetric Ethanol Excise Tax Credit.

[38] The EISA does not specify the biodiesel mandate level beyond 2012, leaving the decision to rulemaking by the Environmental

Protection Agency.

[39]B. Yacobucci, *Biofuels Incentives: A Summary of Federal Programs*, RL-33572 (Washington, DC: Congressional Research Service, July 2008).

[40] The DOE national laboratories were established after World War II to conduct research on nuclear energy and weapons technology, but when the end of the Cold War led to a reduction in this type of research, many of them diversified into other areas of energy research.

[41]DOE Office of Energy Efficiency and Renewable Energy, *Clean Energy for America's Future* .Accessed May 28, 2011, http://www.nrel.gov/docs/fy10osti/46777.pdf.

[42] U.S. corn acreage peaked at 111 million acres in 1917, but that level occurred before the advent of soybeans in the United States as a major row crop in the 1940s.

[43]R. Trostle, *Global Agricultural Supply and Demand: Factors Contributing to Recent Increases in Food Commodity Prices*, WRS-801 (Washington, DC: USDA Economic Research Service, July 2008).

[44] The Congressional Budget Office tracks projected spending through two different measures—budgetary authority (BA), which is the amount that an agency is *authorized* to spend on a program in a given fiscal year, and outlays, which is the amount an agency is *expected* to spend in a given fiscal year. For most program types, BA and outlays track relatively closely. The major exceptions are for agricultural research and conservation programs, in which the use of long-term grants or contracts mean that outlays occur for a number of years for such programs after funds are initially obligated. Most spending figures in this paper refer to outlays, except for conservation programs.

[45]The Pigsite, *Opportunities to Increase Utilisation of DDGS*.Accessed August 12, 2011, http://www.thepigsite.com/swinenews/26138/opportunities-to-increase-utilisation-of-ddgs.

[46]G. Becker, *Livestock Feed Costs: Concerns and Options*, RS-22908 (Washington, DC: Congressional Research Service, Sept. 2008).

[47]E. Rosenthal, "Rush to Use Crops as Fuel Raises Food Prices and Hunger Fears," *New York Times,* Apr. 7, 2011.

[48] Crop insurance was covered by conservation compliance provisions for a brief period, between the passage of the Federal Crop Insurance Reform Act of 1994 and the Federal Agriculture Improvement and Repair Act of 1996.

[49] Rodale Institute, *Opportunity: $62 Million Awarded to New York CREP program.* Accessed May 28, 2011, http://newfarm.rodaleinstitute.org/features/1103/op-NY_crep.shtml.

[50]USDA Farm Service Agency, *Conservation Reserve Program: Monthly Summary, March 2011*. Accessed May 28, 2011, http://www.fsa.usda.gov/Internet/FSA_File/mar2011crpstat.pdf.

[51]USDA Natural Resources Conservation Service, *Excessive Erosion on Cropland, 1997*. Accessed May 28, 2011, http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_012279.pdf.

[52]USDA Natural Resources Conservation Service, *Landowner Profile*.Accessed August 12, 2011ftp://ftp-fc.sc.egov.usda.gov/CA/news/Stories/area_2/craig_mcnamara.pdf.

[53] Tier I contracts were five-year contracts, while Tier II and III contracts could be five- or ten-year contracts.

[54]USDA Natural Resources Conservation Service, *FY11 Explanatory Notes, Natural Resources Conservation Service, Supplement to USDA FY11 Budget Request,* released Feb. 2010. Accessed May 28, 2011, http://www.obpa.usda.gov/25nrcs2011notes.pdf.

[55] Great Lakes Commission, *The Great Lakes Basin Program for Soil Erosion and Sediment Control: Annual Report Program Year 1997.* Accessed April 29, 2011, http://www.glc.org/basin/pubs/annual/pdf/97.pdf.

[56] Between 1990 and 2002, this program was funded through legislative earmark requests from members in the region and did not have formal authorization.

[57] Society of American Foresters, *Federal Tax Treatment of Forest Land*, October 2006. Accessed May 28, 2011, http://www.eforester.org/fp/documents/Federal_Tax_Position_Statement_10-6-05.pdf.

[58]P. Gibson, et al., *Profile of Tariffs in Global Agricultural Markets*, Agricultural Economics Report 796 (Washington, DC: USDA Economic Research Service, April 2001).

[59] The original Commodity Credit Corporation was incorporated under the laws of the state of Delaware in 1933.

[60] Since 1994, annual riders to various appropriations bills have prohibited the funding of tobacco export promotion activities by the U.S .Department of Agriculture.See: Government Accountability Office, *USDA's Foreign Agricultural Service Lacks Specific Guidance for Congressional Restrictions on Promoting Tobacco*, GAO 03-618 (Washington, DC: GAO, May 2003).

[61]R. Chite, *Agricultural Disaster Assistance*, RS-21212 (Washington, DC: Congressional Research Service, November 2004).

[62]G. Becker, *Farm and Food Support under USDA's Section 32 Program*, RS-20235 (Washington, DC: Congressional Research Service, November 2006).

[63]R. Barry, et al., *Sugar: Background for 1990 Farm Legislation*, Staff Report No. AGES-9006 (Washington, DC: USDA Economic Research Service, February 1990).

[64] A 2.5 percent ad valorem tariff is also imposed on ethanol imports, but it gets far less attention than the $0.54/gallon "secondary" tariff.

[65]M. Ahearnand A. Effland, *U.S. Farm Policy and Small Farms*, Paper presented at EAAE-IAAE Seminar, University of Kent,U.K., June 2009.