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Emphasis Shifts in U.S. Conservation Policy

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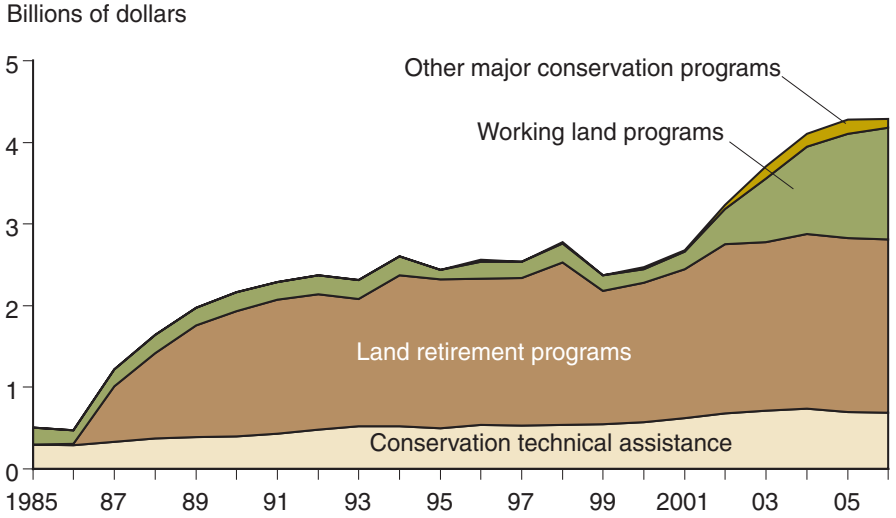
Recognizing the potential negative impact that some farming practices (excess fertilization and manure, for example) can have on our Nation's natural resources, policymakers have been devoting more attention and funding to conservation policies and programs. From the mid-1980s until 2002, the bulk of USDA conservation funds went toward land retirement: paying farmers to remove environmentally sensitive land from crop production for a time period specified under contract. As of January 2007, almost 36.7 million acres were retired from crop production—about 10 percent of U.S. cropland.

With the passage of the 2002 Farm Security and Rural Investment Act (2002 Farm Act), Congress substantially increased conservation funding and made changes in program emphasis. The 2002 Act directed the largest share of new spending to programs emphasizing financial assistance for conservation on working lands—lands used for crop production and grazing—and livestock-related issues. Between 1986 and 2001, funding for working land programs that emphasize financial assistance accounted for about 9 percent of conservation-related financial and technical assistance to farmers, with the remainder allocated to land retirement programs (69 percent), Conservation Technical Assistance (CTA) (22 percent), and other programs (less than 1 percent). Between 2002 and 2006, however, working land programs accounted for 25 percent of funding while land retirement programs accounted for 54 percent of funding, CTA for 18 percent, and other programs for 4 percent. Meanwhile, the Conservation Reserve Program (CRP)—the largest U.S. land retirement program—has increasingly funded practices that complement or support working agricultural lands, including edge-of-field filter strips,

The 2002 Farm Act authorized substantially increased conservation funding, particularly for working lands programs



Source: Analysis by USDA, Economic Research Service of data from USDA, Office of Budget and Program Analysis.

A farmer adjusts the water level in a restored wetland.

riparian buffers, and grassed waterways. While not prompted by the 2002 Act, this trend is part of the movement toward support for conservation on working land.

A second point of greater program emphasis in the 2002 Act is wetland restoration. While the Act modestly increased funding for land retirement, a large portion of the increase was directed to the restoration of wetlands, largely through a major expansion of the Wetland Reserve Program.

A third—more subtle but nonetheless notable—change in program emphasis is reflected in the way funds are awarded through these programs. On balance, the Act decreased the use of decisionmaking tools that increase environmental cost effectiveness (i.e., the level of benefits per dollar of program cost). Certainly, funding increases will expand the amount of land enrolled in conservation programs and the number of participating producers. What isn't so certain, however, is whether these changes will add up to more cost-effective conservation overall.

Expanding Conservation on Working Lands

By 2002, land retirement programs had already succeeded in improving environmental quality by removing much of the more fragile land from production. The remaining land available for retirement was likely to produce fewer overall environmental benefits or come at a higher cost than land already in the program. If true, conservation program funding may be better spent on land in production.

Moreover, working land program incentives could encourage conservation practices by some producers who are unlikely to retire land. Smaller operations—those with sales of less than $250,000 per year—produce roughly one-third of U.S. agricultural output. Households operating these farms often receive a large share of their income from land retirement payments and nonfarm sources, rather than from crop or livestock production. Larger farms, on the other hand, produce two-thirds of U.S. agricultural output. These farms are generally more commercially oriented, and the households that operate them depend less on income from nonfarm sources, and are less likely to participate in land retirement programs. The increased funding for conservation on working lands, and the focus of these programs on livestock-related issues, may have increased conservation participation by farmers who are not interested in land retirement.

Funding for the Environmental Quality Incentives Program (EQIP), the largest working lands program, was $3.93 billion for the 5 years 2002 through 2006, an average of almost $800 million per year. Annual funding under the 1996 Act (1996-2001) was limited to $200 million per year. Through this program, crop and livestock producers can get technical and financial assistance to plan and implement conservation practices on land in production. Since 2002, at least 60 percent of EQIP spending has been slated, by statute, for livestock-related resource concerns, up from 50 percent under the 1996 Act. Limits on the size of participating live-

stock operations and on maximum payment levels per operation were also loosened in the 2002 Act. In 2004, livestock-related practices accounted for 63 percent of EQIP funding.

The Conservation Security Program (CSP) was created by the 2002 Farm Act and first implemented in 2004. Overall, about $500 million was allocated for CSP for 2004-06. Unlike EQIP, CSP provides payments to eligible producers based on ongoing environmental performance or "stewardship," rather than just for newly installed or adopted practices. Before they can enroll land in CSP, producers must first address soil quality and water quality concerns. CSP stewardship payments (and "existing practice" payments) are based on local land rental rates and the extent of conservation on the entire farm, rather than on conservation costs or benefits (see box, "Major USDA Conservation Programs").

CSP is similar to EQIP in the sense that it seeks to improve environmental performance on working agricultural lands. The large majority of CSP funds—more than 80 percent in 2005-06—support environmental "enhancements." Enhancements include addressing additional resource concerns, such as air quality, or going beyond basic conservation standards (collectively referred to as "nondegradation" standards) to a higher level of conservation effort. For example, meeting a nondegradation standard on soil quality involves maintaining soil conditions, while CSP soil quality enhancement payments support producer efforts to improve soil condition. In a number of cases, enhancement payments are based on environmental performance as measured by indices like the soil condition index. Payments are to be based on the *improvement* in index values, ensuring that payments reflect a measure of potential environmental gains.

The Conservation Reserve Program, although primarily a land retirement program, also funds buffer practices associated with working land (e.g., edge-of-field filter strips, riparian buffers, and grassed waterways). At the beginning of 2007, about 20 percent of CRP funding was devoted to these practices, up from about 10 percent at the beginning of 2002. While these practices cover only 10 percent of CRP acreage, their impact is arguably larger than this percentage would suggest because buffer practice acreage is strategically located to intercept sediment, nutrients, and other pollutants before they leave the farm.

While the expansion of conservation on working lands has significant advantages, implementing it poses additional challenges. Payments for a broader range of conservation practices, available to a wider range of producers, complicate both conservation planning and the monitoring of practice implementation and maintenance. This is particularly true for some conservation management practices, such as crop nutrient management, which are less visible and thus more difficult to monitor than changes in tillage or contour cropping. Multiple conservation programs for working lands could increase the challenge in making programs work together seamlessly for producers while keeping the cost of program administration low. And producers participating in conservation programs need conservation planning services and technical assistance. To help handle the increased workload, the 2002 Act included authorization for producers to directly contract with NRCS certified third-party technical service providers (TSPs) to supplement USDA's Natural Resources Conservation Service (NRCS) field staff.

Wetlands Restoration Coming of Age

While the expansion of working lands programs was the big story in the conservation portion of the 2002 Farm Act, a greater emphasis on wetlands restoration in the modest expansion of land retirement programs is also significant. The legislation augments authority for land retirement in the CRP and the Wetlands Reserve Program (WRP) by 4 million acres, up about 11 percent. While wetlands restoration accounts for about 3 percent of current land retirement, 40 percent or more of the authorized increase may be devoted to wetlands restoration. In addition to the 1.2 million acres added to WRP, the CRP routinely enrolls farmed wetlands that are restored to wetlands condition. By the end of 2006, WRP acreage was up to 1.85 million acres, compared to roughly 1 million acres in 2002. Up to 500,000 acres of the 2.8-million-acre rise in the CRP acreage cap could be specially earmarked for restoration of currently farmed wetlands. As of January 2007, CRP included more than 2 million acres of wetland. The shift toward wetlands restoration is significant because of the relatively high environmental benefits per acre provided by wetlands.

De-emphasizing Cost-Effectiveness?

In addition to increasing the amount and scope of conservation funding, policymakers changed how conservation program managers decide which producers receive funds through the various programs. The 2002 Act reduced the use of traditional targeting tools: competitive bidding and environmental benefit-cost indices. Payments based on past conservation efforts—stewardship payments—may not leverage the same level of environmental gain as payments that support new practices. On the other hand, a new environmental targeting tool—performance-based payments—has been used to implement some CSP enhancements.

Competitive bidding is a process in which producers submit bids on installation of conservation practices and the pro-

posed level of cost sharing in percentage terms (that is, the percentage of total installation or implementation cost paid by the Government). Through comparing the submitted bids, program managers can identify farms and fields where the costs of retiring land or installing conservation practices are relatively low.

The elimination of competitive bidding in EQIP may have resulted in lower environmental benefits per dollar of program spending. EQIP data show that producers have often been willing to accept cost-share rates (what the government pays) well below the pre-2002 Farm Act maximums of 75 percent of cost for structural practices, such as terrace installation, and 100 percent of a local (usually county) maximum for management practices, such as integrated pest management. Between 1996 and 2001, the overall national average cost-share rate for structural practices in EQIP was 35 percent. For management practices, payments averaged 43 percent of local maximums. For 2003-05, the average EQIP cost-shares rate for structural practices was about 60 percent (although rates can be as high as 75 percent for high-priority practices) while management practice payment rates have been fixed at the local level, usually a county.

Lowering the maximum cost-share rates may mean that some producers who might have participated in EQIP will no longer be interested, even if they could provide environmental benefits that would justify a higher payment rate. That is, some producers who may be able to make a cost-effective contribution to environmental protection would be effectively excluded from the program. On the other hand, producers who would be willing to adopt conservation practices at a lower rate could receive payments that exceed the level necessary to induce their participation, leading to higher than necessary contract costs. In other words, the environmental benefits gained may be obtained at a higher than necessary cost.

EQIP program managers continue to use environmental benefit-cost indices to determine which proposed contracts they will accept. Environmental benefit-cost indices are point systems used to rank

Major USDA Conservation Programs

Land Retirement Programs

The **Conservation Reserve Program (CRP)** offers annual payments and cost sharing to establish long-term, resource-conserving cover, usually grass or trees, on environmentally sensitive land. The 2002 Farm Act increased the acreage cap from 36.4 million acres to 39.2 million acres. Funding is through the Commodity Credit Corporation (CCC). For 2002 through 2006, total CRP funding was $9.2 billion. As of January 2007, about 36.7 million acres are covered by CRP contracts.

The **Wetlands Reserve Program (WRP)** provides cost sharing and/or long-term or permanent easements for restoration of wetlands on agricultural land. The 2002 Farm Act increased the acreage cap from 1.1 million acres to 2.3 million acres. The legislation requires the Secretary of Agriculture (to the greatest extent practicable) to enroll 250,000 acres per year. Funding is through the CCC. For 2002 through 2006, total WRP funding was $1.3 billion. As of 2006, a cumulative total of roughly 1.85 million acres were under contract through WRP.

Working Lands Conservation Programs

The **Environmental Quality Incentives Program (EQIP)** provides technical assistance and cost-sharing or incentive payments to assist livestock and crop producers with conservation and environmental improvements on working lands. EQIP funding was $3.93 billion for the 5 years 2002 through 2006. Additional CCC funding of $270 million has been available for ground and surface water conservation. EQIP's focus on livestock increased in 2002, with 60 percent of funding slated for livestock-related issues, up from 50 percent in the 1996 Farm Act. Moreover, much of this funding can now be used to cost share nutrient management on large, concentrated animal feeding operations (CAFOs) that will be required to comply with new Clean Water Act regulation of manure handling and disposal.

Previous limits on the size of participating livestock operations, which excluded operations with more than 1,000 animal units, were eliminated in the 2002 Farm Act. Payment limits previously set at $50,000 total per operation were raised to $450,000 per operation over the 6-year life of the 2002 Farm Act.

The **Wildlife Habitat Incentives Program (WHIP)** provides cost sharing to landowners and producers to develop and improve wildlife habitat. For 2002-06, WHIP received $171 million, an average of $35 million per year, compared with just over $62 million during the 1996 Farm Act, 1996-2001, an average of about $9 million per year.

The **Conservation Security Program (CSP)** focuses on good stewardship, but also provides incentives for improving conservation performance. Producers become eligible for one of three CSP "tiers" only after treating nationally significant resource concerns—soil quality and water quality—on at least a part of their farm. To qualify for tier I, soil and water quality concerns must be addressed on at least part of the farm. Producers who have addressed soil and water quality concerns throughout their farm are eligible for tier II. Tier III participants must have treated all resource concerns present on their farm—not just soil quality and water quality.

conservation practices according to expected environmental benefits and costs. Using these rankings, program managers can identify farms and fields where conservation practices on working lands would yield relatively high environmental benefits (see box, "Tools for Cost-Effective Conservation").

Performance-based payments are just what they sound like—payments that vary with the level of environmental performance achieved. Performance-based payments direct the largest participation incentives to those producers who can achieve environmental improvement at a low cost. Producer payments for some CSP enhancements are established using performance indices. For example, payments for soil quality and water quality enhancements depend on the condition of the soil and the potential for water quality improvement, respectively. Those producers who can take actions necessary to achieve high index scores at a relatively low cost have the greatest incentive to undertake soil and water quality enhancements.

Finally, stewardship and existing practice payments are unlikely to produce a significant level of new environmental gain because they do not directly fund new practices. By reducing the overall level of environmental gain leveraged per dollar of expenditure, these payments may reduce the cost effectiveness of environmental gains. Nonetheless, these payments do offer some opportunity for environmental gain. Producers who receive stewardship and existing practice payments may be more likely to maintain existing practices, particularly those producers who installed practices without government assistance (practices that are not subject to ongoing maintenance requirements). These payments could also encourage other producers to seek assistance for basic conservation treatment through other programs (e.g., EQIP), particularly for soil quality and water quality, in the hope of qualifying for CSP at some future date. Finally, in the absence of payments for good stewardship, there is some concern that producers may be reluctant to adopt conservation practices on their own. If stewardship payments encourage

CSP offers several types of payments. "Stewardship" and "existing practice" payments are based, roughly, on a percentage of the county average rental rate for the specific type of land involved. In some situations, new practices can be cost shared through "new practice" payments. Payments for environmental "enhancements" accounted for more than 80 percent of CSP payments in 2006.

CSP was first implemented in 2004. For 2004-06, total CSP funding was $500 million. While CSP is available nationally, it is being offered only in selected watersheds for any given signup. For 2004-06, CSP was available in 280 watersheds.

Other Conservation Programs

Through **Conservation Technical Assistance (CTA),** USDA provides ongoing technical assistance to agricultural producers who seek to improve the environmental performance of their farms. CTA funding was about $3.5 billion for 2002-06.

The **Farm and Ranch Lands Protection Program (FRPP)** provides funds to State, tribal, or local governments and private organizations to help purchase development rights and keep productive farmland in agricultural use. For 2002-06 FRPP funding totaled $426 million. In contrast, its predecessor, Farmland Protection Program, received just over $50 million total during 1996-2001.

The **Grassland Reserve Program (GRP)** is designed to improve and conserve native-grass grazing lands through long-term rental agreements (10, 15, 20, or 30 years) and 30-year or permanent easements. While normal haying and grazing activities are allowed under GRP, producers and landowners are required to (1) restore and maintain appropriate grasses, forbs, and shrubs; (2) address all relevant resource concerns (e.g., soil erosion); and (3) refrain from converting the land for crop production, development, or other uses. For rental agreements, annual rental payments equal (up to) 75 percent of grazing value. Permanent easements are to be purchased at fair-market value, less grazing value, while 30-year easements are to be purchased at 30 percent of the value of a permanent easement. Cost sharing is provided for up to 75-90 percent of the restoration and maintenance costs, depending on the type of grassland. GRP enrollment is limited to 2 million acres of grassland. Funding of up to $254 million is authorized over the 6-year life of the 2002 Farm Act. During FY 2003-06, $236 million in financial assistance was made available to producers through GRP.

Tools for Cost-Effective Conservation

Competitive bidding—A process in which producers submit bids on the conservation practices they are willing to adopt (or the type of cover they are willing to establish on retired land) and the level of payment they would be willing to take in exchange for taking these actions. Bids are selected for program participation based on potential for environmental gain and the level of payment requested by the producer. Thus, producers can improve bids by offering to install more environmentally beneficial (but more expensive) practices or by reducing the level of payment they are willing to accept.

Environmental indices—A point system used to rank the proposed application of conservation practices according to expected environmental benefits. Points may be awarded for the use of particularly effective practices, the environmental sensitivity of the land where practices are to be applied, or proximity to particular resources, such as lakes or streams. The use of an environmental benefit-cost index in the CRP (land retirement program) has resulted in increased public benefits of the program, according to ERS research. By using these tools to identify land for retirement, public benefits from water-based recreation, pheasant hunting, and wildlife viewing have increased by at least $370 million per year, while program acreage and costs have remained virtually unchanged.

Performance-based payments—Payments that vary with the level of environmental gain attributed to the action that triggered the payment. For example, payments could be commensurate with water quality gains attributed to the use of practices that reduce nutrient and sediment loss to water. To maximize environmental gain performance-based payments, the payment per unit of environmental change (e.g., ton of soil erosion reduction) would have to equal the value of the environmental gain attributed to the last unit of change (e.g., the water quality gain attributed to the last or marginal ton of soil erosion reduction). Because these values are rarely known, however, environmental indices may be used as proxies.

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A USDA conservationist discusses cultivation practices with a farmer.

some producers to install conservation practices where they would have otherwise hesitated to do so, environmental gain would be realized.

Opposing Directions?

The net effect of the seemingly opposing directions of the increased emphasis on working land conservation and reduced emphasis on cost effectiveness is difficult to discern. The emphasis on working lands, wetlands, and performance-based payments pushes toward increasing the overall cost effectiveness of conservation policy in producing environmental benefits. On the other hand, moving away from competitive bidding and toward stewardship payments may pull in the opposite direction by decreasing the environmental gains per program dollar.

This article is drawn from . . .

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