



United States Department of Agriculture  
Economic Research Service

#### ECONOMIC BRIEF NUMBER 4



### Conservation Program Design

## Contrasting Working-Land and Land Retirement Programs

Marcel Aillery

Agriculture is a major use of the Nation's natural resource base, with nearly two-thirds of the U.S. land area in farmland, ranchland, or private forestland. Given the potential impact of agricultural production on resource use and quality, resource stewardship and protection of natural systems has been an important focus of the USDA program mission. USDA conservation policy encompasses an array of agricultural conservation strategies. Two strategies account for the majority of USDA conservation payments to producers: (1) improving resource management on working lands—cropland and grazing land in production, and (2) longterm retirement of environmentally sensitive croplands.

Cropland retirement has accounted for most USDA conservation funding since 1986, with a recent shift toward conservation practices on working lands. Differences in objectives and design across land retirement and working-land programs have implications for regional production and income, environmental outcomes, public expenditures, and cost effectiveness, requiring an appropriate balancing of program funds. While land retirement often provides greater environmental benefit per acre, larger environmental gains per program dollar may be achievable through conserving practices on working lands. The suitability of land retirement versus working-land initiatives depends on regional resource priorities and resource conditions on the farm. Greater integration across land retirement and working-land programs could be an effective means of addressing multiple resource concerns, although policy implementation would involve significant challenges.

Voluntary conservation payment programs need to specify who is eligible to receive payments, how much can be received, for what actions, and the means by which applicants are selected. The achievement of program goals in a cost-effective manner hinges on the choices policymakers and program managers make when answering these questions.

**This Economic Brief is one in a set of five** exploring specific design options these decisionmakers face:

- (1) income support versus environmental objectives,
- (2) alternative ways to target programs,
- (3) the use of bidding in determining payment levels,
- (4) land retirement and conservation on working lands, and
- (5) payments for conservation practices versus the level of environmental performance.

Available at [www.ers.usda.gov/publications/eb1](http://www.ers.usda.gov/publications/eb1), [.../eb2](http://www.ers.usda.gov/publications/eb2), [.../eb3](http://www.ers.usda.gov/publications/eb3), [.../eb4](http://www.ers.usda.gov/publications/eb4), and [.../eb5](http://www.ers.usda.gov/publications/eb5)

## Conservation Programs Focus on Land Retirement After 1985

The 1985 Food Security Act signaled a new era of agricultural conservation with two major land retirement programs. The Conservation Reserve Program (CRP) targets removal of highly erodible and other environmentally sensitive lands from agricultural production under 10- to 15-year lease agreements. The Wetland Reserve Program (WRP) restores cropped wetlands under permanent easement or long-term agreements. Subsequent extensions of the CRP—including the continuous signup and the Conservation Reserve Enhancement Program (CREP)—provide for partial-field enrollment in priority conservation practices.

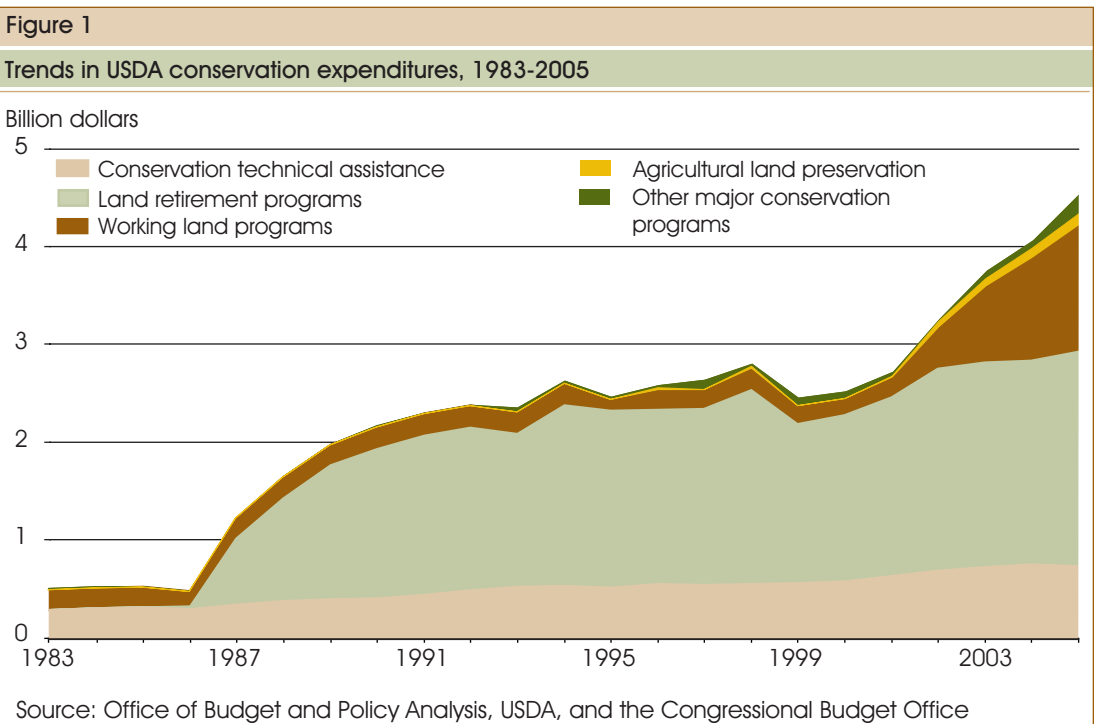
Under cropland retirement, program participants agree to convert environmentally sensitive farmland to conserving uses in return for annual rental payments or easement payments (lump-sum or phased in) that reflect the value of local agricultural activity for a given land quality. In CRP's general signup, payment rates are derived through a competitive bidding process, subject to rental rate caps fixed by soil type at the county level. Producers offer to enroll a parcel with a specified practice at a given price. Offers are ranked using an Environmental Benefits Index (EBI) that weights expected environmental gains and offer prices. CRP cost-sharing is available for establishing conservation covers and other practices that enhance environmental benefits on enrolled acreage.

Since 1986, land retirement has dominated Federal conservation expenditures (fig. 1). From 1986 through 2000, more than 90 percent of direct conservation payments were allocated to land retirement programs. This share has declined in recent years as funding for working-land and agricultural land preservation programs increased. Nonetheless, land retirement programs still accounted for more than half of all USDA conservation expenditures in 2005, including more than \$1.9 billion for CRP and \$275 million for WRP.

## Addressing Environmental Concerns Through Land Retirement

Land retirement programs are best suited to cropland where environmental costs are high relative to the value of production. Such lands are often characterized by lower productivity in cropped uses or exceptionally high ecological services in a natural state, particularly where environmental concerns are acute and ecosystem functions require time to re-establish (see box – “Matching Policy Tools with Environmental Concerns”).

Land retirement programs offer important advantages over working-land programs. Greater environmental benefits per contract acre are often achievable, and monitoring and enforcement requirements are generally



## Matching Policy Tools With Environmental Concerns: Land Retirement and Working-Land Programs

Situations where land retirement is likely to be relatively cost effective:

- Cropland with very highly erodible soils, where costs necessary to achieve acceptable levels of erosion exceed the value of crops
- Restoration of cropped wetlands, where ecosystem functions improve with time
- Cropland subject to severe flooding, resulting in significant risk of crop loss as well as downstream flood damages
- Farmland and forestland providing habitat—particularly where species require large contiguous areas, or where critical habitat for species recovery is limited and highly localized
- Forest regeneration on environmentally sensitive cropland, requiring multi-year stand establishment
- Irrigated production in areas with acute water issues, e.g. rapidly declining aquifers, poor quality return flows

Conservation measures on working lands that are likely to be relatively cost effective:

- Nutrient management measures for crop and livestock systems to protect water quality
- Soil conserving measures to minimize runoff and soil loss on highly productive fields
- Water management measures for improved water conservation and drainage control
- Livestock grazing regimes that help sustain grassland and riparian systems
- Wildlife enhancements—including Safe Harbor agreements—that improve habitat and forage conditions
- Preservation of farmland and open space in urban fringe areas

lower. Wildlife populations requiring large contiguous parcels of suitable habitat may benefit from land retirement. Furthermore, rental payments for retired land provide an important income source for many small farms. To the extent that commodity supplies are reduced, land retirement may help to support commodity prices and reduce Federal commodity program payments.

However, addressing environmental concerns through land retirement poses challenges. Program cost of land retirement is relatively high, as payment rates generally reflect the full agricultural value of the land. Retired lands may require substantial restoration to achieve desired ecosystem functions. Rural communities may be adversely affected by large adjustments in farm production, farm input and processing activities, and tax base, although recent ERS research suggests that local impacts are not significant in most areas. Long-term land retirement may limit producer flexibility in responding to changing commodity markets. Finally, environmental benefits may be partly offset if land retirement induces cropping expansion or intensification on other lands, and environmental benefits are transitory if land eventually returns to crop production.

### Increasing Emphasis on Conserving Practices for Working Lands

In recent years, there has been growing recognition of the importance of conservation on working farms and ranches. Given the extent of national acreage in agricultural production, substantial environmental progress may be possible only through conservation on working lands. Moreover, many environmental concerns may be addressed more cost effectively through working-land practices, extending available conservation dollars. With limits on available funding in land retirement programs, cost-share and incentive mechanisms that leverage private sector investment are important in achieving national environmental goals.

The Environmental Quality Incentives Program (EQIP), introduced in 1996 and extended under the 2002 Farm Security and Rural Investment Act (the 2002 Farm Bill), is the Nation's primary agricultural conservation program for working farms and ranches. EQIP provides financial and technical assistance to encourage adoption of farming systems that conserve resources and enhance environmental performance. The Conservation Security Program (CSP), authorized in 2002, provides financial and technical assistance to farmers and ranchers recognized as exemplary land stewards. The Wildlife Habitat Incentives Program promotes habitat development on farm and ranch operations. Additional USDA programs providing easement funding for land preservation—including the Farm and Ranch Land Protection Program and Grassland Reserve Program—encourage resource stewardship on working farms and ranches.

Under EQIP, cost-share and incentive payments are available for eligible practices under short-term (1- to 10-year) contracts. Cost-share rates range from 50 to 75 percent of installation cost for structural and vegetative practices, with incentive payments for management practices (e.g. nutrient, pesticide, irrigation, and

habitat management) established at the county level. Cost effectiveness is assessed through a State or local ranking procedure that considers anticipated environmental benefits of conservation practices proposed by the applicant. Targeting provisions based on priority resource areas, and more recently, national/regional environmental priorities, have sought to enhance program effectiveness (see Economic Brief No. 2).

The CSP differs from EQIP in that payments are awarded based on levels of conservation established on the farm or ranch. Participants are placed in one of three tiers, with higher payment rates for improved land stewardship. The CSP was established, in part, to provide equity for producers who have successfully addressed resource concerns, and may not be served by payment incentives under existing conservation programs.

Much of the 80-percent increase in conservation funding under the 2002 Farm Bill was allocated to working-land programs. Annual funding levels for working lands increased from \$174 million in 2000 to roughly \$1.3 billion in 2005. EQIP accounted for more than \$1.0 billion in 2005, with 60 percent of program expenditures allocated to livestock-related resource concerns. CSP funding increased to \$202 million in 2005, with \$38 million in the Wildlife Habitat Incentives Program.

### Addressing Environmental Concerns Through Working-Land Programs

Working-land programs are best suited to environmental concerns that can be addressed at least cost through changes in farming practices, particularly in areas where agriculture is highly productive and provides substantial public benefit.

Working-land programs offer important advantages over land retirement. Use of conservation practices on working lands may achieve environmental benefits at lower program cost (less than the full agricultural value of land), since land remains in production. A wide range of environmental concerns can be addressed on the vast area of U.S. farmland and rangeland in active production, subject to funding availability. Improved practices can help maintain the long-term productive capacity of agricultural resources and the viability of agricultural activities. Working-land programs may also help producers mitigate the cost of Federal/State regulatory requirements (e.g., manure-nutrient management).

But there are also challenges in addressing environmental concerns on working lands. Farmers' management time is limited, and the management of some conservation systems may compete directly with the management of production. Conservation practices may require substantial technical support to assess problems and implement appropriate conservation structures and practices. The availability of qualified technical assistance is an important concern. Adoption of recommended management practices (e.g., crop nutrient management) may be difficult to monitor and costly to enforce. Finally, demand for program participation has exceeded funding levels, and significant information and resources are needed to allocate scarce funds effectively.

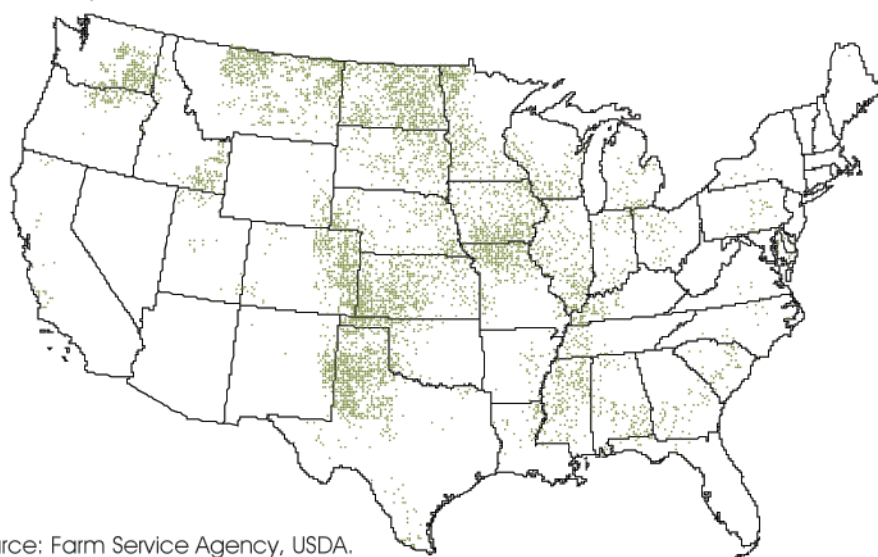
### Regional Enrollment Patterns Vary by Conservation Strategy

The distribution of retired farmland differs considerably from enrolled acreage under working-land programs, with implications for the nature and magni-

Differences in objectives and design across land retirement and working-land programs have implications for regional production and income, environmental outcomes, public expenditures, and cost effectiveness, requiring an appropriate balancing of program funds.

**Figure 2**  
Distribution of CRP lands, July 2004

Each dot represents 5,000 acres.

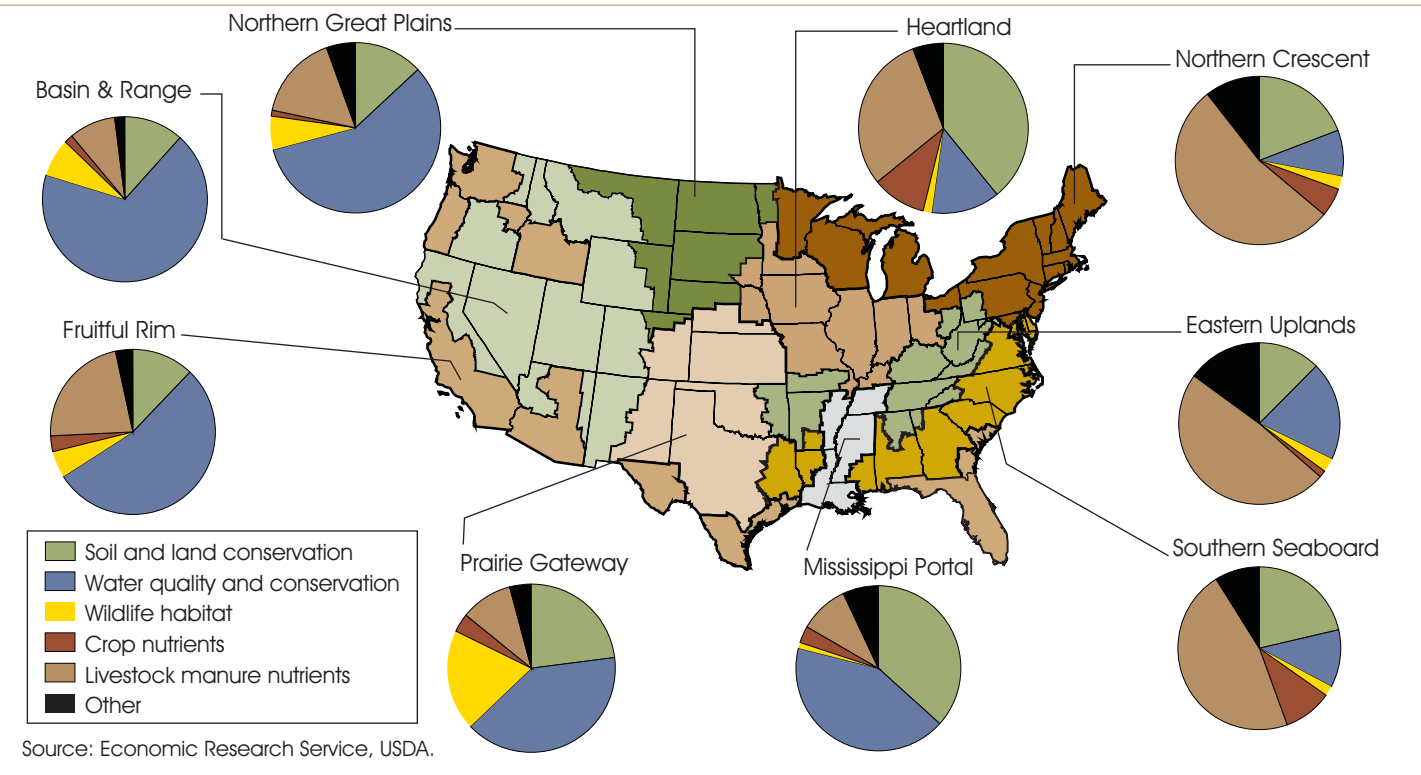


Source: Farm Service Agency, USDA.



Figure 3

Distribution of EQIP funds by environmental concern and region, 1997-2002



Theoretically, working-land and land retirement programs could be integrated to maximize benefits from public conservation expenditures.

tude of regional environmental benefits. CRP enrollment totaled roughly 31.7 million acres nationwide in 2004, much of it in the Midwest and Plains States, reflecting a long-time emphasis on highly erodible soils (fig. 2). The continuous signup provision has broadened the distribution of CRP enrollment, with an additional 3.1 million acres in high-priority practices (filter strips, riparian buffers, grassed waterways, windbreaks), much of this targeted to priority resource areas. Approximately 1.6 million acres were enrolled in the WRP in 2004, with acreage concentrated in the Mississippi Delta area, Florida, and California.

EQIP enrollment has been more evenly distributed across producing areas, reflecting the wide array of eligible practices, a State allocation system for funding, and broadly defined targeting provisions (based on national resource priorities under the 2002 Farm Bill). In 2003, program outlays per acre were highest in parts of the Mountain and Pacific regions and throughout the Eastern States—regions less served by land retirement programs. EQIP payments generally reflect regional resource concerns: soil conservation in the Midwest, animal waste management in the East, and water management in the arid West (fig. 3). CSP payments for resource stewardship are also broadly distributed. CSP contracts were targeted to 220 watersheds through FY 2005, with eligibility eventually extending to all U.S. watersheds on a rotating basis.

### Toward an Integrated Agri-Environmental Policy?

Theoretically, working-land and land retirement programs could be integrated to maximize benefits from public conservation expenditures. This might be achieved through a single comprehensive program, or through multiple programs within a single administrative system. An integrated policy framework could better leverage market-based competitive bidding and benefit-cost assessment, resulting in more optimal funding allocations. A producer’s bid to improve nutrient management, for example, could be compared against an alternative bid to retire cropland from production. While nutrient management would presumably provide fewer nutrient-control benefits than land retirement (some nutrients would continue to be lost from cropland), nutrient management would likely be less costly per unit of nutrient loss since farmers retain revenues from land in production.

An integrated policy framework could be managed to address multiple farm policy objectives. Benefits may be defined to include various environmental measures—like water quality and wildlife habitat—as well as producer income and equity, community impacts, Federal outlays, and other considerations. In principle, the CRP’s Environmental Benefits Index could be expanded to encompass a broader range of benefits. Cost-efficiency factors by farm practice under EQIP provide a conceptual basis for comparing across land retirement and working-land initiatives.

Program integration offers several potential advantages:

- Consideration of both land retirement and practice adoption bids would maximize environmental gains per conservation dollar while increasing production flexibility and responsiveness to market signals.
- Interactions across resource concerns could be considered in assessing the location and extent of land retirement relative to working lands. For example, land retirement could be coordinated with farming practices to maximize wetland habitat and crop-residue forage for migratory waterfowl. Additionally, the retirement of selected irrigated lands with appurtenant water rights could lessen water-supply cutbacks on downstream operations during drought.
- Land retirement and working-land initiatives could be more effectively coordinated with other conservation policy tools, including conservation compliance, agricultural land preservation, and regulatory mandates.
- Policy integration through expansion of a competitive bid system could reduce distorting effects on production.

However, effective policy coordination would involve significant information, resource, and administrative requirements:

- Assessing the benefits of land retirement versus working-land initiatives over multiple measures and highly diverse resource settings is difficult, making allocation decisions problematic. Considerable modeling and data development would be required to expand the EBI.
- Administrative costs may offset some portion of efficiency gains due to consolidation. Alternative administrative structures and program design issues would have to be resolved, and the role of State versus Federal authorities would need to be established.

## Conclusion

Land retirement and working-land initiatives will continue to be important features of the national conservation portfolio, with the suitability of each dependent on the nature of the environmental concern and resource conditions on the farm. While current land retirement programs remain administratively and programmatically separate from working-land programs, hard distinctions have blurred as programs have adapted to accommodate similar priority practices and increased flexibility in producer options. Working-land programs have encouraged cropland conversion to non-cropped uses, such as grassed waterways and stream buffers, on environmentally sensitive portions of the farm or ranch operation. Land retirement programs have increasingly targeted partial fields for high-priority conservation practices—as in the case of stream buffers under CREP and CRP continuous signup. In some cases, retired acreage may continue to be used for agricultural purposes. CRP lands, for example, may be grazed under specified conditions (with payments adjusted in some cases), providing additional benefits to producers while potentially enhancing habitat values. All of these measures suggest a trend toward greater integration of working-land and cropland retirement initiatives.

A comprehensive policy that better integrates land retirement and working-land initiatives offers the prospect of enhanced cost-efficiency in achieving conservation goals. But our understanding of the policy implications remains limited. Further research in selected watersheds could provide insight on efficiency gains achievable using current measures of costs and benefits, as well as additional resources (data, technical assistance, etc.) needed for more effective program integration.

Land retirement and working-land initiatives will continue to be important features of the national conservation portfolio, with the suitability of each dependent on the nature of the environmental concern and resource conditions on the farm.

This brief is drawn from . . .

Andrea Cattaneo, Roger Claassen, Robert Johansson, and Marca Weinberg, *Flexible Conservation Measures on Working Land*, ERR-5, U.S. Department of Agriculture, Econ. Res. Serv., June 2005, available at: [www.ers.usda.gov/publications/ERR5](http://www.ers.usda.gov/publications/ERR5).

Patrick Sullivan, Daniel Hellerstein, LeRoy Hansen, Robert Johansson, Steven Koenig, Ruben Lubowski, William McBride, David McGranahan, Michael Roberts, Stephen Vogel, and Shawn Bucholtz, *The Conservation Reserve Program: Economic Implications for Rural America*, AER-834, U.S. Department of Agriculture, Econ. Res. Serv., September 2004, available at: [www.ers.usda.gov/Publications/AER834](http://www.ers.usda.gov/Publications/AER834).

U.S. Department of Agriculture, *Food and Agricultural Policy: Taking Stock for the New Century*, September 2001, available at: [www.usda.gov/news/pubs/farmpolicy01/fpindex.htm](http://www.usda.gov/news/pubs/farmpolicy01/fpindex.htm)

THE U.S. DEPARTMENT OF AGRICULTURE IS AN EQUAL OPPORTUNITY PROVIDER AND EMPLOYER  
For more information, see [www.ers.usda.gov/abouters/privacy.htm](http://www.ers.usda.gov/abouters/privacy.htm)