Chapter 6

Agri-environmental Policies

Agriculture is the largest user of land and water resources in the US and the impact of farming on the environment has been well documented. This chapter discusses US agricultural-environmental policies, examining the array of policy instruments used and the objectives addressed. It looks at the evolution of US conservation programmes before the 2008 Farm Act, as well as at conservation provisions in the 2008 Farm Act.

6.1. Policy background

Agriculture is the largest user of land and water resources in the US, with soil erosion; water pollution; competition for water resources between irrigators and other users; conservation of wildlife habitats and species and air quality being the major environmental issues associated with farming (OECD, 2008a). As much as 60% of total soil erosion and 6% of total national GHG emissions originate from agriculture. Soil carbon sequestration and bio-energy production are increasing, although bio-energy provides only 3% of total energy consumption, less than 1% of transportation fuel (mainly from maize-based ethanol), and 5% of chemical product output. Federal targets aim to increase these shares to 4% for energy and fuel, and to 12% for chemicals by 2010, which could have a significant impact on crop production patterns, prices and international commodity markets.

US agricultural-environmental policies, which have been part of farm policy since the 1930s, encompass an array of policy instruments which rely heavily on financial incentives and technical assistance to agricultural producers who, in exchange, volunteer to adopt practices designed to improve their environmental performance.[1] In the main, these policies have traditionally addressed soil and water conservation and the pollution problems associated with crop and livestock production. However, increasing attention is now being given to wetlands restoration, wildlife habitats, farmland protection and a wide range of other objectives.

Conservation programmes can be broadly grouped into the following categories (see Box 6.1):[2]

- *Land retirement programmes:* these programmes provide payments to farmers for removing environmentally sensitive land from crop production for a specific period of time, agreed under contract (at least 10 years or, in some cases, permanently).
- *Working-land conservation programmes:* which provide technical and financial assistance to farmers who install or maintain conservation practices on land in production.
- *Agricultural land preservation programmes:* aim to retain land in agricultural production by purchasing the farmer's right to convert land to other uses, such as development.
- *Technical assistance:* on-going technical assistance is provided to agricultural producers seeking to improve the environmental performance of their farms.
- *Conservation compliance:* requires recipients of federal farm programme payments, such as commodity loans and direct and counter-cyclical payments, to conserve and protect wetlands and soils on highly erodible land.

Box 6.1. **Major USDA conservation programmes**

Land retirement programmes

- The *CRP,* which is the federal government's largest land retirement programme for private land, offers annual rental payments and cost-sharing assistance to establish various approved conservation practices (*e.g.* planting a cover crop on the land to reduce erosion). Contracts run for 10 to 15 years. Economic use of the land is limited during the contract period, but landowners retain the right to return land to crop production at the end of the contract. Applicants must meet certain eligibility criteria, bid to enrol land and contracts are awarded using an Environmental Benefits Index.
- The *Wetlands Reserve Program (WRP)* provides cost-sharing and/or long-term or permanent easements for restoration of wetlands on agricultural land. Landowners retain rights of ownership and rights to recreational uses, such as hunting and fishing.

Working lands conservation programmes

- The *Environmental Quality Incentives Program (EQIP)* provides technical assistance and cost-sharing or incentive payments to assist livestock and crop producers who agree to adopt a wide range of environmentally benign production practices or best-management practices on working lands. At least 60% of the programme's funding is targeted at livestock producers.
- The *Wildlife Habitat Incentives Program (WHIP)* provides a system of cost-sharing to landowners and producers with the aim of developing and improving wildlife habitat.
- The *Conservation Stewardship Program (a new CSP)*, first implemented in 2009, replaced the Conservation Security Program (CSP). Rather than the three-tier payment system of the CSP, payments for new CSP contracts are based on meeting or exceeding a stewardship threshold. Payments are based on the actual costs of installing conservation measures, income forgone by producer and the value of the expected environmental benefits.

Agricultural land preservation programmes

- The *Farmland Protection Program (FPP)* (formerly the Farm and Ranch Lands Protection Program) provides funds to state, tribal, or local governments and private organisations to purchase development rights on agricultural land in urban fringe areas and keep farmland in agricultural use.
- The *Grassland Reserve Program (GRP)* is designed to improve and conserve native-grass grazing lands through long-term rental agreements (10, 15 and 20 years) and permanent or 30-year easements. For rental agreements, annual payments are up to 75% 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% of the value of a permanent easement. Cost-sharing is provided for up to 50% of approved restoration and maintenance costs, depending on the type of grassland. GRP enrolment is limited to 0.8 million ha of grassland.

6.2. Evolution of US conservation programmes before the 2008 Farm Act

Historically, the bulk of funding for conservation schemes focused largely on management measures to control soil erosion. The current era of conservation programmes was set in motion with the introduction of the 1985 Farm Act, with succeeding Farm Acts expanding the scope and funding for conservation programmes. The 1985 Farm Act established the Conservation Reserve Program, which provided payments to producers who withdraw environmentally sensitive cropland from production for 10 to 15 years, and introduced the concept of conservation compliance.

The primary stated goal of the CRP in its early years was to reduce soil erosion on highly erodible cropland. With enactment of the 1990 Farm Act, eligibility for CRP was broadened beyond highly erodible land to include other types of more environmentally sensitive land. USDA also began ranking bids based on the environmental benefits they offered (using an environmental benefit index, or EBI) and set maximum allowable rental rates based on a soil-specific estimate of the rent earned on comparable local cropland. Following passage of the 1996 Farm Act, wildlife habitat was added to the EBI and producers have had the option of enrolling environmentally desirable land devoted to specific conservation practices with high environmental benefits at any time through a continuous sign-up. In contrast to the general sign-up, under which the contract selection process is through competitive auctioning, the continuous sign-up is non-competitive and landowners can enrol at any time.

Although, over time, it has come to seek to address an evolving set of conservation objectives, it has failed to address two issues of environmental protection in agriculture: *i)* many environmental impacts of agricultural production, such as water quantity and quality and wildlife habitat have not been taken into consideration; and *ii)* land retirement programmes provided no means of achieving conservation objectives on land actively engaged in agricultural production (Sullivan *et al.*, 2004). Consequently, these unaddressed environmental policy objectives have led policy makers to search for new policy tools (Batie and Schweikhardt, 2007).

The 1990 Farm Bill created a federal programme to restore and place conservation easements on wetlands – the Wetlands Reserve Program. The 1990 Farm Bill also authorised the Water Quality Incentives Program that signalled the emergence of water quality as a primary environmental objective of conservation programmes.

Because of CRP's narrow focus, the Federal Agriculture Improvement and Reform Act of 1996 consolidated and extended major environmental programmes. In particular, it established the Environmental Quality Incentives Program, which addresses a wider range of environmental concerns on agricultural lands in production.[3] EQIP considered environmental quality and agricultural production to be compatible goals, and provided assistance to help producers meet new environmental standards (Stubbs, 2009). The programme provided cost-share and (optionally) incentive payments for producers to initiate and maintain conservation activities on working lands, with a specific focus on mitigating water pollution.

Initially, 50% of EQIP funds were directed to solving resource problems on livestock operations, but waste management structures were ineligible for funding, and EQIP payment limits were so low that they failed to attract the participation of most large operations. The 1996 Farm Act also introduced the Wildlife Habitat Incentives Program, to encourage land uses providing wildlife habitat, and the Farmland Protection Program, to purchase farmland development rights.

The 2002 Farm Act re-authorised nearly all agri-environmental programmes under the 1996 FAIR Act, mandated a sharp increase in funding for conservation programmes and widened the scope of issues addressed by these programmes.[4] The importance of working lands conservation has gained prominence over cropland retirement, with the largest share of new spending being directed to programmes for conservation on working lands and livestock-related issues, although funding for land retirement remains the largest category of conservation funding.

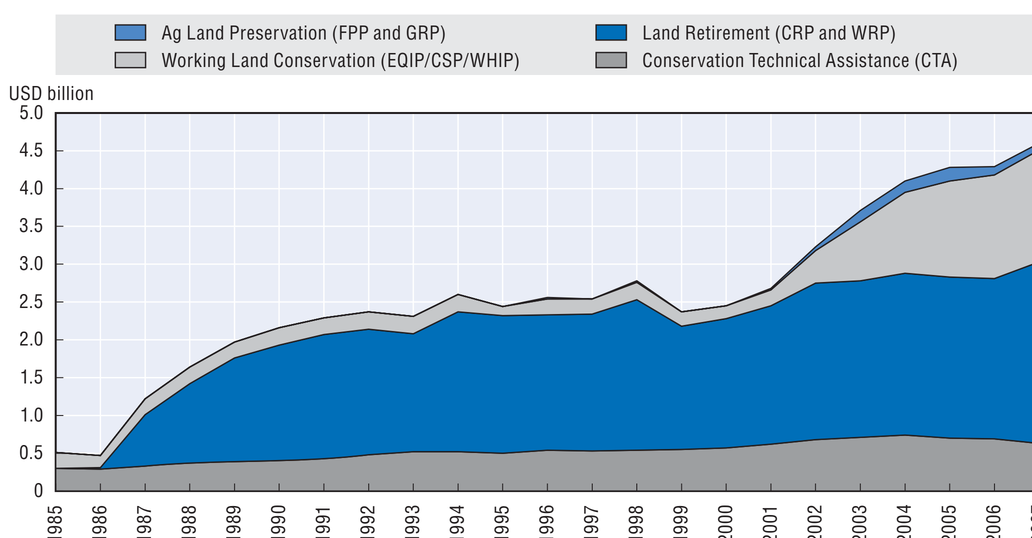
Increased funding enabled EQIP to enhance its response to livestock resource concerns and pursued broader conservation priorities of reducing non-point source water pollution, air quality impairments and erosion, as well as wildlife habitat deterioration. Terms of eligibility were broadened, 60% of funding was directed to livestock resource concerns and a new payment limit of USD 450 000 was established.

The 2002 Farm Act also created the Conservation Security Program to reward producers achieving and maintaining above-benchmark standards ("reference level") of conservation management. This programme offered both cost-share and incentive payments to reach, maintain, or improve land stewardship by participation in one of three contract performance tiers.

With respect to land retirement programmes, the 2002 Farm Act assigned greater emphasis to wetland restoration, largely through a major expansion of the Wetland Reserve Program. Evaluation of CRP contracts began to consider soil erosion, water quality protection and wildlife habitat. The CRP acreage cap was increased and other farm-land retirement programmes, such as the CRP Farmed Wetlands pilot programme, the Conservation Reserve Enhancement Program and the Wetlands Reserve Program were continued and expanded.

As shown in Figure 6.1, total funding for conservation programmes has risen sharply over time, particularly under the 2002 Farm Act, mainly due to expansion of programmes on working lands. Major conservation programme expenditures have increased by 79%, from USD 2.6 billion in FY1996 to USD 4.6 billion in FY2007.

Figure 6.1. **Trends in conservation expenditures by major programme categories, 1985-2007**



Source: ERS analysis of OBPA budget summary data (1985-2007).

Overall, land retirement has dominated federal agricultural conservation spending since 1985 and continues to be the largest single component of agricultural conservation spending. Roughly 50% of all USDA conservation spending since 1985 has been dedicated to land retirement.

The evolution of conservation policy and programmes has shifted outlays among land retirement, working lands, agricultural land preservation, and conservation technical assistance programmes. While between 1986 and 2001 funding for working land programmes accounted for about 9% of conservation-related financial and technical assistance to farmers, these programmes accounted for 25% of funding between 2002 and 2006. The corresponding shares of land retirement programmes were 69% and 54%. Funding for working lands increased from an average of approximately USD 200 million per year during FY1996-01 to nearly USD 1.5 billion in FY2007.

Funding for farmland preservation programmes has become a significant and growing part of conservation spending. However, technical assistance has not kept pace with increased conservation programme funding, and has fallen steadily in absolute terms since FY2004.

Technical assistance is primarily funded through annual appropriations under the Conservation Technical Assistance Program. Technical assistance is also funded by the CRP and other conservation programmes. As such, Figure 6.1 underestimates, to some extent, the actual expenditures on technical assistance.

6.3. Conservation provisions in the 2008 Farm Act

The 2008 Farm Act re-authorises almost all the existing conservation programmes by increasing spending on them by 11% (USD 2.7 billion) (Table 6.1). It also modifies several programmes and creates a number of new ones. The trend of expanding programmes to fund working land conservation and environmental practices continues, and support for wetland restoration and farmland preservation is also increased.

Table 6.1. **Funding for major conservation programmes under the 2002 and 2008 Farm Acts**

	2002-07	2008-12	Change
	USD million		%
Land retirement programmes	12 725	13 030	2
Conservation Reserve Program	11 165	10 934	–2
Wetland Reserve Program	636	2 096	230
Working land programmes	6 344	11 727	85
Environmental Quality Incentives Program	4 919	7 325	49
Conservation Security Program[1]	882	3 792	330
Wildlife Habitat Incentive Program	213	425	100
Agricultural land preservation programmes	729	1 050	44
Farm and Ranch Lands Protection Program	499	743	49
Grassland Reserve Program	254	240	–6
Conservation Technical Assistance	4 143	3 150	–24
Total (major conservation programmes)	**23 941**	**26 641**	**11**

1. Replaced by the Conservation Stewardship Program in the 2008 Farm Act.
Source: Office of Budget and Policy Analysis Budget Summary data (2002-07) and Congressional Budget Office (2008-12).

The new Farm Act also includes the Endangered Species Recovery Act, which will provide tax deductions for private individuals and landowners who volunteer to conserve habitat for threatened and endangered species on their lands.

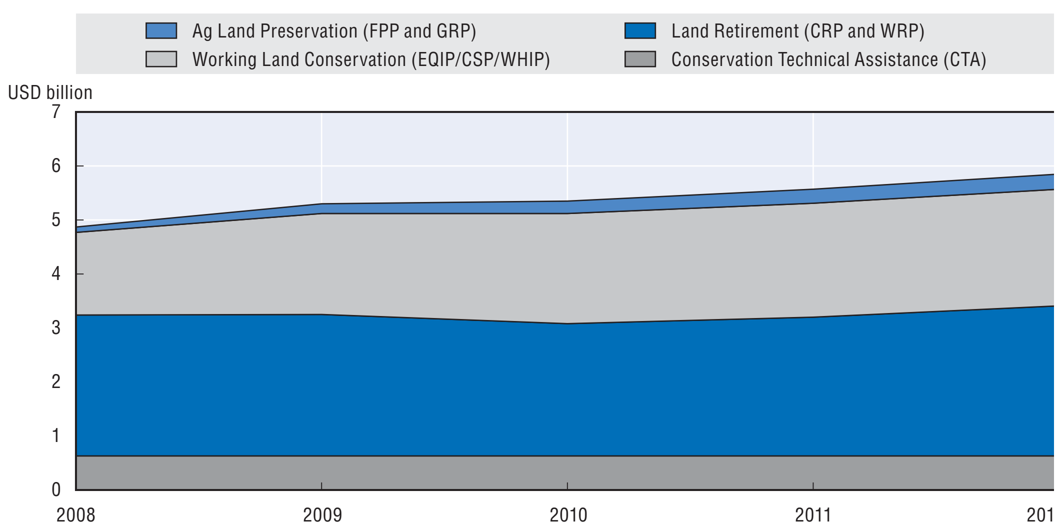
Changes to existing programmes address eligibility requirements, programme definitions, enrolment and payment limits, contract terms, evaluation and ranking criteria, and other administrative issues. In general, the conservation title includes certain changes that expand eligibility and the delivery of technical assistance under most programmes to broaden their scope to cover, for example, forested and managed lands, pollinator habitat and protection, and identified natural resource areas.

Producer coverage across most programmes is also widened to include beginning, limited resource, and socially disadvantaged producers; speciality crop producers; and producers transitioning to organic production. The Act also creates new conservation programmes to address emerging issues and priority resource areas, and new sub-programmes under existing programmes.

Land retirement programmes continue to play a major – but diminishing – role

Reserve programmes, including the CRP and the WRP, were both re-authorised up until 2012. Land retirement programme expenses are forecast to total USD 13.03 billion over FY2008-12 and average 2% higher than FY2002-07 expenses (Table 6.1), but to fall throughout the period as a percentage of total conservation programme expenditures (Figure 6.2).

Figure 6.2. **Trends in conservation expenditures by major programme categories, 2008-12**



Source: ERS analysis of CBO scores (2008-12).

The 2008 Farm Act caps CRP enrolment at 12.9 million ha, down from its previous cap of 15.7 million ha, as from 1 October 2009. It also modifies the pilot programme that allows for wetland and buffer acreage to enrol in CRP, subject to state acreage and maximum size limitations. Current CRP contracts can be amended to allow land uses such as biofuel production, wind turbines and grazing under certain conditions. New provisions will permit the transfer of lands under CRP contract to beginning, socially disadvantaged or other special-status farmers, with the existing owner receiving a bonus of up to two years of rental payments.

The 2008 Farm Act makes certain programme changes, including allowing for USDA to address state, regional, and national conservation initiatives; expanding the programme to cover beginning and socially disadvantaged farmers/ranchers; allowing for certain types of managed grazing and installation of wind turbines on enrolled lands (but at reduced rates); requiring that programme participants manage lands according to a conservation plan; requiring USDA to survey annually the per-acre estimates of county cash rents paid to CRP contract holders; clarifying the status of alfalfa grown as part of a rotation practice; and establishing cost-sharing rates for certain types of conservation structures.

The 2008 Farm Act increases the enrolment limit for the WRP by nearly one-third, to 1.2 million ha, and expands eligible lands to include certain types of private and tribal wetlands, croplands, and grasslands, as well as lands that meet the habitat needs of specific wildlife species.[5]

Working lands programmes receive most funding emphasis

As shown in Figures 6.2 and 6.3, funding for working lands programmes is forecast to total USD 11.7 billion over FY2008-12; it averages 85% higher than FY2002-07 expenses and is 44% of total conservation expenses in FY2008-12. EQIP and the CSP – the two largest USDA working lands programmes – are authorised to receive additional budget authority.

EQIP funding authorisation increased by 49% (USD 2.4 billion) over FY2008-12, as compared to the FY2002-07 period (Table 6.1). The 2008 Farm Act made some changes to EQIP relating to the level of funding; eligibility requirements; overall payment limitations; payment terms for producers who are just starting up, have limited resource and are socially disadvantaged; offer ranking procedures; and the ground and surface water conservation fund.

In particular, new EQIP priorities highlighted in the 2008 Farm Act include modification of EQIP's Conservation Innovation Grants Program to cover air quality concerns associated with agriculture (including greenhouse gas emissions); a new Agricultural Water Enhancement Program, replacing the Ground and Surface Water Conservation Program, to address water quality and water conservation needs on agricultural lands; and payments for conservation practices to organic production or transition.

EQIP payments are based on incurred costs (up to 75% cost-share) and forgone income (up to 100%) associated with practice adoption/maintenance, except that socially disadvantaged, limited resource, and beginning producers will receive cost-share payments that are 25% above those of other producers (up to a maximum of 90%). The 2008 Farm Act retains the option of the 2002 Farm Act not to use competitive bidding for the selection of contracts, as was the case in the 1996 Farm Act.

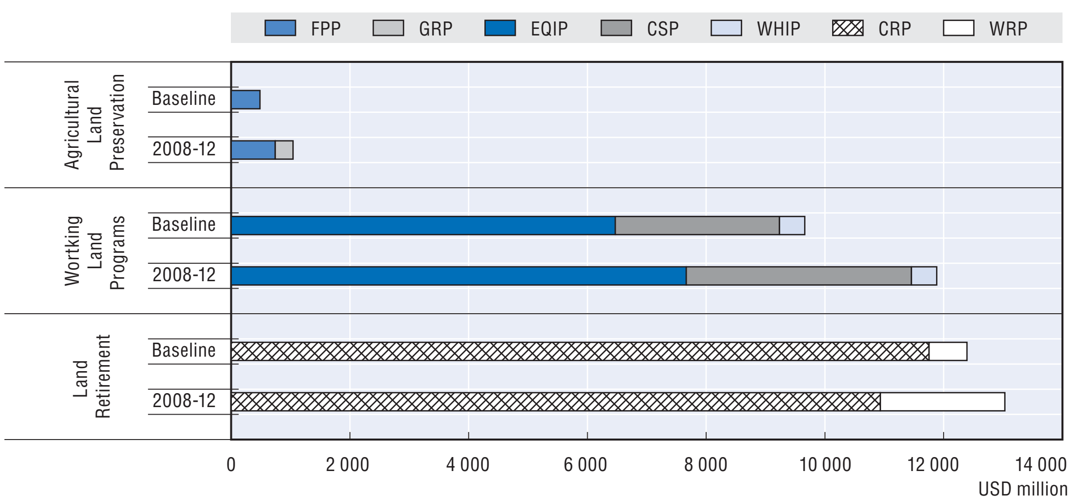
The 2008 Farm Act sets aside 5% of EQIP spending for beginning and socially disadvantaged farmers and lowers the payment limit to USD 300 000 (down from USD 450 000) in any six-year period per entity, except in cases of special environmental significance (including projects involving methane digesters) as determined by USDA. The requirement that 60% of funds be made available for cost-sharing to livestock producers, including incentive payments for producers who develop a comprehensive nutrient management plan, is retained.

The 2008 Farm Act replaces the Conservation Security Program with a new and re-named Conservation Stewardship Program (a new CSP). It receives total budget authority of USD 3.8 billion over FY2008-12: FY2012 forecast expenditures are 199% of FY2007 expenses.

The new CSP, which began in 2009, will continue to encourage conservation practices on working lands, but only producers with a high level of environmental stewardship and who agree to take additional action can participate. In particular, the "three-tier" payment approach of the 2002 Farm Act is replaced by payment to compensate producers for installing and adopting conservation practices. The amount of payment will be based on environmental benefits and costs of applying the conservation practices on land already in production.

Enrolment in the new CSP is targeted to cover nearly 5.2 million new hectares per year at an average cost of implementation of USD 44.5 per hectare, with individual producer payments limited to USD 200 000 per entity in any five-year period. The types of eligible lands are expanded to include priority resource concerns, as identified by states; certain private agricultural and forested lands; and also some non-industrial private forest lands (limited to not more than 10% of total annual hectares under the programme).

Figure 6.3. **Comparison of 2002 and 2008 Farm Acts, by major conversation programmes, FY2008-12**



Source: ERS analysis of OBPA budget summary data (1985-2007) and CBO scores (2008-12).

Programme payments may not be used for the design, construction, or maintenance of animal waste storage or treatment facilities or associated waste transport or transfer devices which are covered by EQIP. Technical assistance will also be provided to specialty crop and organic producers, along with pilot testing of producers who engage in innovative new technologies. Supplemental payments may be made available to producers undertaking certain types of crop rotations.

Among other programmes, the 2008 Farm Act re-authorises WHIP at current funding levels, but limits programme eligibility to focus on lands for the development of wildlife habitat. The limit on cost-share payments is raised to 25% of costs incurred on private agricultural land, non-industrial private forest land and tribal lands. It also allows USDA to prioritise projects that address issues raised by state, regional, and national conservation initiatives.

The 2008 Farm Act also authorises increased funding for several programmes, including the Grassroots Source Water Protection Program and the Small Watershed Rehabilitation Program; and it provides additional mandatory funding for the Agricultural Management Assistance Program and includes Hawaii as an eligible state under that programme.

Agricultural land preservation programmes expanded

Forecast expenses for land preservation programmes total USD 1.05 billion over FY2008-12, averaging more than triple the actual FY2007 expenses for purchase of development rights. For the Farmland Protection Program, the 2008 Farm Act authorised funding of USD 743 million over FY2008-12, an increase of nearly 50% on what was actually spent over 2002-07. The 2008 Farm Act makes several technical changes to the programme, covering its administrative requirements, appraisal methodology, and terms and conditions, among other issues.

The objectives of the programme were also expanded to include protecting agricultural use and related conservation values and increasing the opportunities for partnership with government and non-government organisations. Eligibility was extended to include forest land and other land that contributes to the economic viability of the agricultural operation, or that serves as a buffer from development.

For the *Grassland Reserve Program*, the 2008 Farm Act raised the enrolment limit, from 0.5 million ha to 1.3 million ha during FY2008-12, with 40% of funds for rental contracts (10-, 15- and 20-year duration) and 60% for permanent easements. Also the definition of eligible lands is expanded to include those with historical or archaeological importance and up to 10% of enrolment may come from expiring CRP contracts.

Other provisions

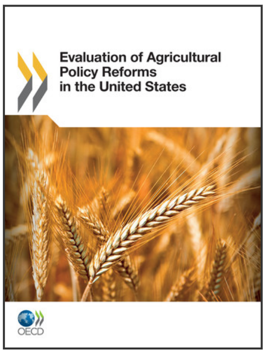
Most conservation programmes have programme-specific payment limits, and across-the-board income limitation prohibits conservation payments to persons with average adjusted gross non-farm income greater than USD 1 million (unless at least two-thirds of adjusted gross income is farm income.

Conservation compliance provisions, introduced in the 1985 Farm Act, are retained. Co-operative conservation projects at the community, ecosystem or watershed scale will receive 6% of all conservation programme funds. USDA is to develop technical guidelines for measuring and reporting environmental services provided by farm, ranch, and forest lands, with priority directed to emerging carbon markets.

Notes

1. Agricultural conservation spending accounted for about 16% (USD 5.4 billion) of all federal environmental expenditure in FY2007.
2. In addition, there are regulatory programmes that affect agriculture, but which generally originate outside the House and Senate Agriculture Committees in Congress and are primarily concerned with non-agricultural industries (*i.e.* the Clean Water Act, Endangered Species Act, Clean Air Act and Federal Insecticide, Fungicide and Rodenticide Act). For a discussion of regulatory programmes in agri-environmental policy, see Claassen *et al.* (2001).
3. EQIP consolidates the Agricultural Conservation Program, the Colorado Salinity Program, and the Great Plains Conservation Program.

4. Nevertheless, funding for major programmes, such as EQIP and CSP, have been reduced below the levels authorised under the 2002 Farm Act in order to meet overall budget goals.
5. The 2008 Farm Act makes certain programme changes, including changing the payment schedule for easements; specifying criteria for ranking programme applications; requiring that USDA conduct an annual survey starting with FY2008 of the Prairie Pothole Region in the northern Great Plains area; and requiring USDA to submit to Congress a report on long-term conservation easements under the programme.



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