

from land treatment. Some of the off-site environmental benefits are attributable to improvements made to enhance freshwater and marine water quality and fish habitat, improved aquatic recreation opportunities, reduced sedimentation of reservoirs, streams, and drainage channels, and reduced flood damages. Additional benefits are from reduced pollution of surface and ground water from agrochemical, improvements in air quality by reducing wind erosion, and enhancements to wildlife habitat.

This analysis was conducted prior to the promulgation of the EPA CAFO final rule. The CAFO rule was published on December 15, 2002 and it underwent changes up to the time of promulgation. As a result, this analysis could not accurately separate the benefits and costs associated with the CAFO rule and those associated with the EQIP proposed rule. There is still some flexibility in the EPA CAFO rule relative to which facilities will be required to have an National Pollutant Discharge Elimination System (NPDES) permit. However, it is known that the CAFO rule will apply to all facilities with more than 1,000 animal units (AUs). Since the CAFO rule claims the environmental benefits for controlling pollution on these facilities, the EQIP rule cannot make the same claim. EQIP will be a primary vehicle for funding compliance with the CAFO rule transferring some of the funding obligations from producers to EQIP so the costs associated with implementing the required pollution control measures apply to EQIP.

This analysis will be revised to take into account comments received during the Proposed Rule comment period. During this revision, a full review of the overlap of the costs and benefits associated with the CAFO and EQIP rules will be undertaken. Meanwhile, it is estimated that approximately \$1.7 billion in annual benefits that were identified in the EQIP economic analysis can be attributed to the EPA CAFO regulation. Consequently, total EQIP benefits are \$5.1 billion and net benefits relative to EQIP funds are \$620 million and net benefits relative to total costs of –\$1.5 billion.

Methodology

In developing the benefit cost analysis for EQIP, it was necessary to identify a baseline for comparison. Since EQIP was created in 1996, the regulation and policy guidance for implementing that version was considered a baseline. In addition, changes to EQIP as outlined in the 2002 Farm Bill have been implemented via a Notice of Fund Availability (NOFA) issued in fiscal year 2002. This version of the program

was also used as a basis for comparison, hence a two-tiered approach to the cost-benefit analysis. In order to estimate potential program impacts, several alternatives or variations of EQIP as outlined in the NOFA have been evaluated. Costs and benefits have been quantified where possible. Costs and benefits that could not be adequately or accurately quantified are discussed qualitatively.

Public costs quantified in this analysis are the total technical and financial assistance outlined in Congressional Budget Office scoring of the 2002 Farm Bill. Private costs are out of pocket costs paid by producers based on average cost share rates of EQIP. The quantifiable benefits are a subset of the environmental benefits that accrue to the types of practices implemented with EQIP. Available data and literature were found which support benefit in the following categories:

- Reduction in sheet and rill reduction as predicted by the Universal Soil Loss Equation (USLE).
- Improved forage production on grazing lands.
- Reduced wind erosion resulting in both improved air quality and reduced soil loss.
- Increased irrigation water use efficiency.
- Benefits of wildlife viewing and hunting resulting from improved wildlife habitat management.
- Reduced fertilizer expense resulting from nutrient management practices not associated with animal waste.
- Animal waste benefits.
- Savings resulting from decreased fertilizer purchases.
- Increased recreational activity resulting from improved water quality.
- Improved commercial shell fishing.
- Reduced incidence of fish kills.
- Reduced contamination of private wells.

In order to conduct the analysis, it was necessary to make certain assumptions based on the available data.

- Practice mix for the old and new EQIP is the same.
- Quantifiable benefits and per unit benefits are constant, and all benefits are based on national averages.
- Technical assistance costs are based on the full workload and costs associated with implementing the EQIP program, and are based on a projected average contract size.
- Average annual and net present value calculations use an OMB-recommended discount factor of 7 percent.

Description of Alternatives

Tier One

The baseline for comparison is the historical EQIP as established in the 1996 Federal Agricultural Improvement and Reform Act. The baseline reflects historical funding levels projected forward along with existing policy. Alternative one consists of EQIP as defined in the 2002 NOFA. The NOFA alternative reflects increased funding levels, no buy-down provision,² the elimination of priority areas, and maximum payment limitation of \$450,000, with a payment cap of 50 percent cost-share for any practices with an actual cost exceeding \$100,000, and the inclusion of large confined animal feeding operations (CAFOs). These are the most significant changes in the program legislation in terms of economic costs and benefits.

Tier Two

For the second tier of the cost-benefit analysis, the baseline (EQIP 2002 Farm Bill as outlined in the NOFA) is compared to three alternatives. Comparison of these alternatives represents sensitivity analyses of potential policy impacts of EQIP implementation. Following is a brief description.

Alternative One—Varying AFO/CAFO Funding Allocation by Size Class

The first alternative is an analysis of various methods of allocating funds to animal feeding operations (AFO) and confined animal feeding operations (CAFO) based on the size of the operation. The specific scenarios evaluated were allocating funds equally to each size class, allocating funds according to the necessary treatment costs, allocating funds based on the total number of animal units, allocating funds based on the number of operations, and allocating funds only to middle or smaller size operations.

Alternative Two—Varying Payment Limitation Between \$50,000 and \$450,000

Although legislation allows a maximum payment of \$450,000 per participant, the analysis considered potential benefits if different payment limitations were allowed based on local market, cultural or economic conditions. Alternative two analyzes the effects of payment limitations ranging from \$50,000, up to the legislated maximum of \$450,000.

² The buy-down provision of the old EQIP allowed producers to improve the offer index of their applications by reducing the amount of cost share funds they would expect.