Summary and Conclusions

Changes in the agri-environmental landscape have brought agri-environmental policy to a crossroads. In the upcoming farm bill debate, policymakers face a broadening array of agri-environmental problems. While farm price and income support appears likely to continue, the form this support will take is unknown. Trade agreements may limit program options. Because farm income and agri-environmental policies are intertwined (e.g., through compliance mechanisms), uncertainty about farm income policy also creates uncertainty about agri-environmental policy. This context may signal an overall rethinking of agricultural policy, including agri-environmental policy.

Agri-environmental policy—the collection of programs that encourage improved conservation and environmental performance in agriculture—has evolved significantly in recent years. Compliance mechanisms have greatly increased consistency between farm commodity programs and environmental objectives, yielding significant environmental gains. Environmental targeting has increased environmental benefit in the CRP. Cost-share programs have been largely consolidated into EQIP, refocusing effort toward livestock operations and nutrient management.

At present, agri-environmental policy employs a range of policy instruments, including land retirement, cost-share payments, and compliance mechanisms, which affect both *whether* and *how* land is farmed. Still other options are available. Agri-environmental payments—subsidy programs that pay producers who achieve good environmental performance or who use environmentally sound practices—have been proposed by the Clinton Administration and in Congress but have been the subject of only limited formal analysis. Agri-environmental payments may be useful in addressing emerging agri-environmental issues and boosting farm income.

In this report, we identified some tradeoffs that policymakers may face in the selection of objectives and the design of an agri-environmental payments program. Because the choices policymakers face are complex, this report cannot provide a plan or "road map" for future agri-environmental policy. It may, however, help in reading the signs along the way.

A number of general lessons can be drawn from our review of existing programs and empirical analysis of a series of hypothetical program designs. First, in a multi-objective policy, there is considerable risk of conflict among potential objectives. Consistency between farm income support and environmental objectives has been enhanced through compliance mechanisms. However, continued coordination among *all* farm programs will be needed to minimize contradictory or duplicative efforts.

Second, performance-based payments may be advantageous in that only environmentally relevant actions are subsidized and producers have significant flexibility to select low-cost alternatives. One-size-fits-all solutions are unlikely to be successful in dealing with agri-environmental problems. Soils, climatic conditions, crops, and management practices vary widely across the Nation. Practices that work well on one farm may be environmentally ineffective or overly expensive on another. Performance-based payments will (1) focus activity on the subset of practices that are effective in a given resource and production setting, and (2) reduce producer participation costs by allowing them to select least-cost alternatives. However, performance-based payments may also involve high costs for planning and enforcement because farm- or even field-specific plans must be devised. Performance-based payments may appear to be a less costly method of leveraging environmental gains because they promote environmental relevance and allow producer flexibility. However, they may be more costly than practice-based payments when planning and enforcement costs are considered.

Third, spatial targeting can improve the cost-effectiveness of an agri-environmental payments program, as evidenced by the CRP. Benefit estimates can help policymakers identify those agri-environmental problems that will yield the greatest net benefit to society. While current environmental benefit estimates are not complete, useful information is available. For example, the benefits of reducing nitrogen runoff from agriculture are likely to predominate in coastal estuaries, where nitrogen is typically the nutrient causing eutrophication (Bricker et al., 1999). Farms near the coast or near major rivers are more likely to contribute to coastal nitrogen loads (Alexander et al., 1999).

Finally, unintended incentives to expand crop production can undermine program performance. Our empirical analysis suggests that agri-environmental payments for *good performance* or *good practices* can encourage expansion of crop production onto previously uncropped land. In the absence of a sodbuster-type

provision, this problem can be severe. Even with sod-buster, cropland expansion can be a problem. Our analysis suggests that the potential benefits of spatial targeting can be undercut if high regional payment rates, designed to encourage greater participation where the value of environmental improvement is high, also encourage cropland expansion.

Agri-environmental policies can provide substantial benefits to society. If policymakers choose to implement a program of agri-environmental payments, their challenge will be to design one that achieves the greatest possible benefit per dollar of cost to society.