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The Use of Performance-based Incentives for Nonpoint Source Pollution Control from Agriculture

Agriculture remains the leading contributor to nonpoint source pollution (NSP) in the U.S. (USEPA 2002). One of the most important reasons that the level of NSP from agriculture continues to exceed acceptable levels is because clear financial signals to farmers, from markets or policy, of society's expectations are lacking (Ribaudo et al. 1999). The development of specific performance measures and incentive mechanisms is a way to provide clear signals to producers (Hausker 1999). Performance-based approaches differ from practice- or design-based approaches by linking production decisions more closely to environmental outcomes through appropriately designed incentive mechanisms. By increasing farmer flexibility and inducing innovative and appropriate approaches, performance-based incentives have the potential to increase the cost-effectiveness of agricultural pollution control spending (Lynch 1994; Ribaudo et al. 1999; Horan and Shortle 2001; Shortle et al. 2001). A recent analysis by the Economic Research Service estimates that performance-based conservation programs can generate more than two times the environmental quality per dollar spent compared to practice-based programs (Weinberg and Claassen 2006). A primary objective of the Performance-based Environmental Policies for Agriculture (PEPA) initiative is to link farm business decision-making to environmental outcomes through the use of appropriately designed incentives. However, designing and implementing performance-based incentives is difficult for several reasons, including the diffuse nature and randomness of NSP and limited knowledge of the linkages among agricultural production decisions and practices (i.e., inputs and technologies), NSP, water quality, and social damage costs (Ribaudo et al. 1999). The PEPA initiative consists of two projects that are (1) facilitating the development performance-based incentives in agricultural watersheds around the U.S., and (2) pilot-testing this approach in Iowa and Vermont watersheds. In these watersheds, farm-level performance measures that are scientifically linked to watershed-level outcomes are being used as proxies to ambient water quality conditions. This presentation will provide an overview of this performance-based approach and describe the projects' activities.

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