



## **USDA-CSREES 2006 National Water Quality Conference**

### **Multiple Benefits of Agricultural Practices**

We examined scenarios, ranging from continuing current trends to converting a significant number of acres to grass and forage-based farming and utilizing other perennial systems, in two watersheds. We found that on hilly land, replacing row crops (corn and soybeans) with grass, hay and diverse crop rotations could significantly reduce sedimentation, nutrient runoff and flooding. Under this last scenario, sedimentation levels dropped by 49 to 84 percent and nitrogen loss declined by 62 to 74. These environmental benefits occurred even as the number of dairy cattle was increased from 5,427 to 12,212 in one watershed and 271 to 911 in the other. Farming systems that rely on perennial plant systems and incorporate livestock could significantly improve water quality.

Our results indicated farm profitability rose as the diversity of farming systems increased. In general, pasture operations have lower production costs when compared to row cropping systems, and sales of livestock products can increase income. Under the scenario utilizing the most diverse plant systems, significantly fewer acres were planted to corn and soybeans, so government commodity payments for these row crops dropped. Even though government payments for enrolling farmland in the Conservation Reserve Program increased under this scenario, the overall taxpayer cost was lower because of the decrease in commodity payments. Thus, policy changes encouraging such systems and the associated benefits could be attained at little additional cost to taxpayers while benefiting farmers financially.

Additionally, this study indicated the public is willing to pay farmers who protect and enhance water quality and wildlife habitat. A random mail survey, in which people were asked about their willingness to pay farmers for a 50 percent reduction in soil erosion and a 50 percent increase in wildlife habitat, indicated that the 394 respondents were willing to pay \$201 annually per household for such benefits.

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