BMP Auctions, a Market Based Approach to Improving Water Quality

FRRCC Tour

September 9, 2008

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Issue

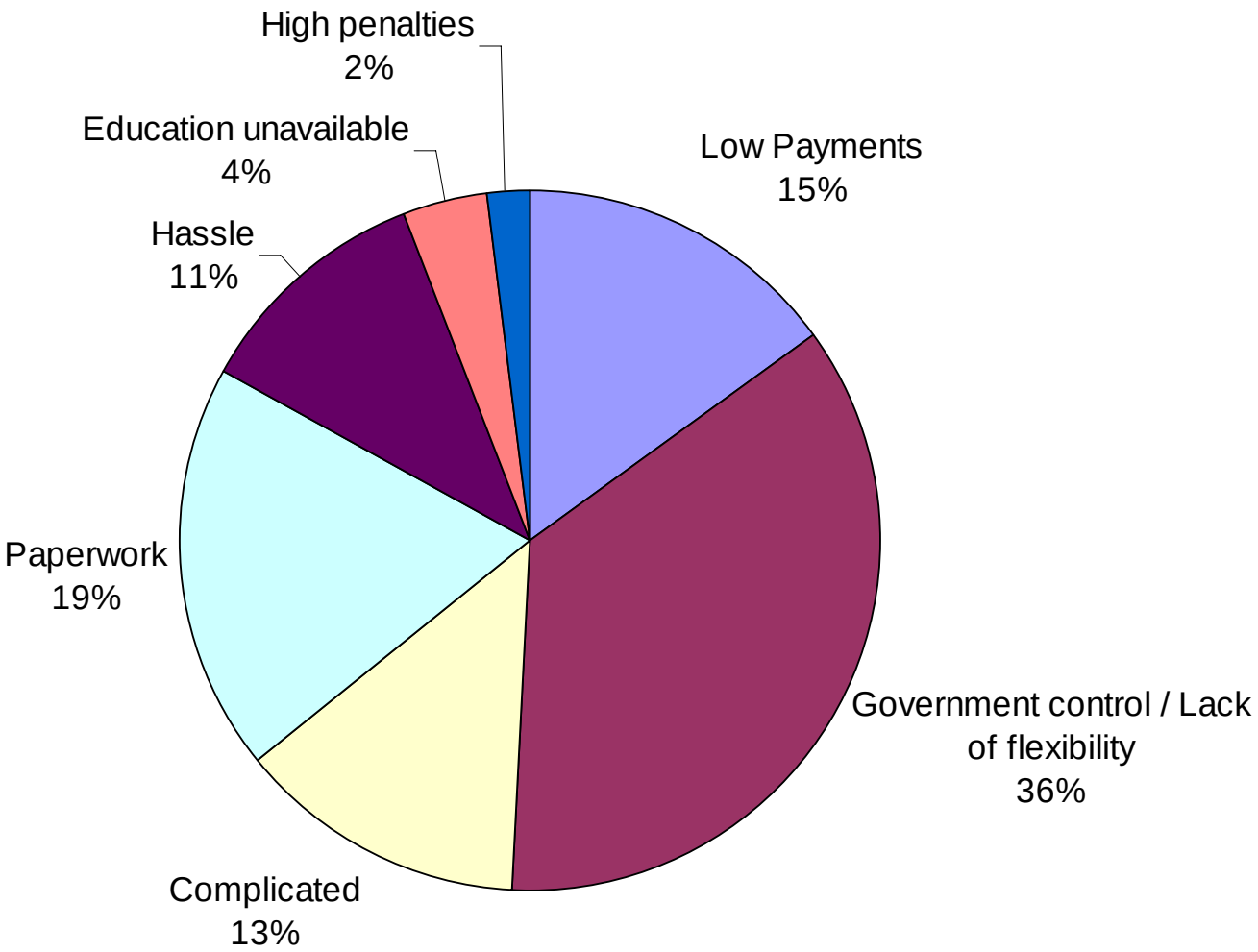
- Adoption of BMPs is critical for restoring/protecting water quality
- Many cost-share & incentive programs in place
- Many producers still choose not to participate and/or adopt BMPs
- Why is this the case?
- How can we increase BMP adoption rates?

K-State Study

- Data from 136 producers from KS and several surrounding states
- Full survey results and discussion:

Journal of Soil and Water Conservation - September/October, 2007

Why do some producers choose not to participate in conservation programs?



Summary of Findings

- Many producers uncomfortable with govt. control over their land-use decisions
  - Conservation Programs should limit the amount of restrictions placed upon enrollees
  - More flexibility
- Increasing payment levels could increase participation, but was not a major factor

Market-based Approaches

- Much interest in market-based approaches
- NRCS Strategic Plan (2005-2010) lists “Market-Based Approaches” as one of three overarching strategies
- Success in Air Quality Trading
- Concepts now being applied to Water Quality Trading
- One hybrid-type approach used in Kansas: BMP Auction

Possible Alternative – BMP Auctions

- Producers submit bids to supply the watershed with WQ improvements
- Bids are ranked by amount of WQ improvements generated per dollar
- Producer who offers WQ improvements at lowest price is contracted with first
- Process repeated until a predetermined point is reached
- BMP auctions identify and purchase the most cost-effective WQ improvements for a specified budget

BMP Auction - *benefits*

- Several benefits to coupling a BMP Auction with flexible implementation funding:
  - Funds can be targeted to highest impact investments and exceed limits of existing programs
  - Producers offered flexibility of choosing alternative BMPs that work best for their operation and name their price
  - Apply stakeholder input & science to guide change in the watershed
  - Provides valuable insights into the incentive levels required to adopt BMPs
    - Guide future policies and investments

Kansas BMP Auctions

- Pomona Auctions:

  -Round #1 in 2007, 24 bids received for $19,062 in total

  -Round #2 in 2008, 21 bids received for $39,508

- Marais des Cygnes Targeted Watershed Grant
  - Simultaneous Kansas and Missouri Auctions
- Upper Arkansas, Toronto, Tuttle Creek, Pomona round #3, Eagle Creek

K-State Watershed Manager

Determining the optimal number of BMPs

Watershed Management in the Past

- 3 main assessment activities took place
  - Models predicted pollutant loading from various parts of the watershed
  - Identified BMPs that could reduce pollutant loading
  - Cost estimates may have been given for some of the BMPs
- Information was provided in a disaggregated form – difficult to use for making management decisions

Watershed Management in the Future

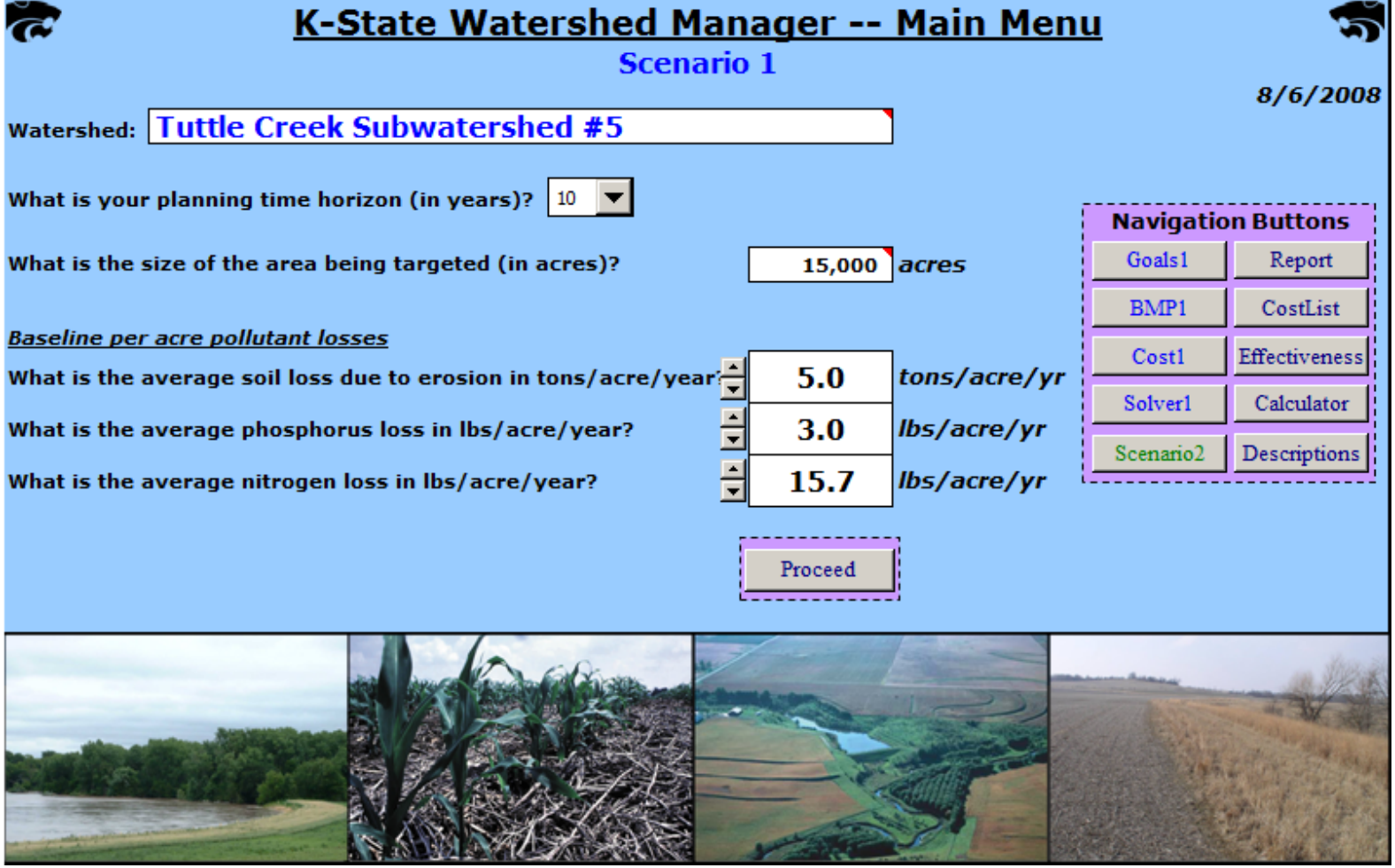
- 3 assessment activities (modeling, BMPs, and costs) are brought together allowing comprehensive evaluation of alternative management plans
- Evaluate economic & environmental effects of plans
- Evaluate combinations of BMPs
- Optimize plans to achieve the greatest “bang for the buck”
- Calculate annualized and investment costs
- Calculate potential cost-share payments and out-of-pocket investment costs

K-State Watershed Manager

- Developed to optimize soil and nutrient loss reduction, it can approach the problem in two ways:
- Determine the optimal amount of BMPs to install to reduce a given amount of loss.

OR

- Maximize the amount of soil and nutrient loss reduction given a set budget.



- User friendly spreadsheet.
- Does require at least mid-level watershed modeling.
- Utilizes powerful optimization techniques.

Thank You!

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