Pilot-Testing
Pay-for-Performance
Conservation

Jonathan Winsten
Winrock International
What’s Needed?

Conservation programs that:

• have clear and appropriate pollution reduction goals
• are focused on environmental outcomes
• get producers interested and motivated to participate
• provide flexibility and incentive to maximize “bang for the buck”
Background

• Agriculture continues to be the primary source of water quality impairments in the U.S.

• Current conservation programs:
  – Spend close to $5 billion per year;
  – Are not focused on environmental outcomes;
  – Have not solved impairments in many regions;
  – Do not motivate some producers
  – Do not incentivize producers to take most cost-effective actions.
Pay-for-Performance Conservation:

• Rewards farmers for achieving specific environmental performance targets;
• Farmers choose how to achieve targets;
• Incentivizes farmers to choose the most cost-effective actions;
• Provides opportunities for additional farm income.
The Economic Justification

• Well-established markets are lacking
• Current incentives tied to specific practices
  – Subset of possible actions
  – Designed to offset cost
  – Effectiveness varies greatly
• Performance-based incentive can serve as a “price” for pollution control
• Environmental performance becomes incorporated into farm business planning
Quantification

How do we quantify environmental performance?
• Measurement vs. Modeling
Measured vs. Modeled Performance

• Measured performance
  – Real data from actual conditions
  – Is measurement practical at the farm-level?
  – Use of proxy variables?

• Modeled performance
  – Allows for scenario analysis – before actions are taken.
  – Is it accurate enough?
    • In a given year?
    • Over the long-term?
  – Is it simple enough to use?
    • Trade-offs between simplicity and accuracy?
Quantification

How do we quantify environmental performance?
• Measurement vs. Modeling

Where do we quantify environmental performance?

Need performance measures that are closely related to ultimate water quality concern AND directly influenced by farm management decisions.
Performance Measures –
In the Lake, Bay, or Ocean
Performance Measures – In the River
Performance Measures – On the Farm
Model at the Farm – Measure at the Watershed

- Modeling farm performance
  - Allow scenario analysis
  - Only the farmer’s actions affect performance
  - Triggers primary incentive payment
  - Incorporate environmental management into farm business decision-making (profit maximization)

- Measuring watershed performance
  - Not prohibitively expensive
  - Provides a real report card
  - Provides a focal point for stakeholders
  - Triggers a secondary incentive payment
  - Farmer-to-farmer peer pressure for participation
Payments and Baselines

What do we pay for?
- Reduced losses vs Stewardship levels

How much do we pay?
- Societal value or enough to get the job done?

Where will the funding come from?
- Already spending $5 billion/year
Vermont Farms – Rock River
Cost per Pound of P Loss Reduced

Individual Farm-level P Reduction Actions

Cost per Pound of P Loss Reduction

- Manure/Fertilizer Management
- Feed Management
- Crop Rotation Changes
- Tillage
- Sediment Traps
- Contouring
- Buffers
- Cover Crop

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Iowa Farms – Coffee Creek
Cost per Pound of P Loss Reduced

Individual Farm-level P Reduction Actions

- Manure/Fertilizer Management
- Crop Rotation Changes
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## Cumulative Results

<table>
<thead>
<tr>
<th>State</th>
<th>P Loss Reduced (lbs/acre/yr)</th>
<th>Farm Cost ($/lb P)</th>
<th>Farm Profit ($/lb P)</th>
<th>Sediment Loss Reduced (tons/acre/yr)</th>
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<tbody>
<tr>
<td>Iowa</td>
<td>0.88</td>
<td>-$0.61</td>
<td>$10.61</td>
<td>1.58</td>
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<tr>
<td>Vermont</td>
<td>0.26</td>
<td>$4.86</td>
<td>$20.14</td>
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</table>
Relevance to Other Initiatives

TMDLs
- How do we move efficiently upstream?

Agricultural Certainty
- Based on performance not practices?

Water Quality Credit Trading
- Buyers need to know what they’re buying
For More Information:

Visit the Project Website:
www.flexincentives.com

Contact Information:
Jonathan R. Winsten
Email: jwinsten@winrock.org
Tel: 802-343-3037