Nutrient Trading Programs

NAICC Annual Meeting - New Orleans, Louisiana

January 31, 2014

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What is Nutrient Credit Trading?

Trading is a tool that allows facilities facing higher pollution control costs to meet regulatory obligations by purchasing equivalent -or superior- reductions from another source at a lower cost.
Nutrient Credit Trading

Buyers

Sellers

Nutrient Credits

Payments
What Nutrients are Traded?
How Much is a Credit Worth?
Why should you care?

Nutrient
Good Management
Is Good Business
Watershed Payment Programs

51 in 2000 → 205 in 2012 = >$8,000,000,000,000 / year
Nutrient Trading Programs Will Not Work Everywhere

Trading works where:

• There is a strong "driver" (regulatory or financial)
• Sources have different treatment costs
• There are credits available
• Stakeholders and regulators work together to design and implement trading programs
Who Regulates Nutrient Trading?
The Clean Water Act (CWA)

- Primary federal statute addressing surface water quality
- Industrial, municipal, and agricultural point sources
  - Total Maximum Daily Load (TMDL)
  - National Pollutant Discharge Elimination System (NPDES) permits or other pollution limits
- Limited ability to address nonpoint sources
- Nonpoint sources can be included - enforcement is left to the states

Trading can help meet water quality objectives
Will Nutrient Trading Programs Harm Water Quality?
• Abatement of nonpoint source pollution is often less expensive than abating point source pollution
• Greater communication and cooperation between point and non-point sources may help achieve a common goal; and
• Unregulated nonpoint sources play a larger role in water pollution control
How much Nutrient Trading is there between Point Sources and Non-Point Sources?
Are Nutrient Trading Programs a means of applying the additional regulation to Agriculture?
Nutrient Trading Programs are Voluntary
Liability for compliance with permit obligations remains with the point source and cannot be transferred.
Are there Different Types of Nutrient Trading Programs?
Nutrient Trading Programs can...

- Expand revenue opportunities for working lands
- Provide environmental benefits
- Accelerate conservation activities
- Reduce costs of restoration or compliance
- Increase opportunities for private investment
- Improve accountability/effectiveness of existing conservation programs
Why is USDA involved?

Prior to 2008,

• Consistent with mission and existing authorities
• Access, Relationships, and Trust
• Experience with environmental markets

In the 2008 Farm Bill, Congress instructed USDA to establish uniform guidelines for science-based methods to measure ecosystem services benefits ... and facilitate the participation of farmers, ranchers, and forest landowners in emerging ecosystem services markets.
### 2008 Farm Bill: Section 2709

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<tr>
<th>Metrics</th>
<th>Market Infrastructure</th>
<th>Coordination</th>
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<tbody>
<tr>
<td>Science-based methods to measure environmental services benefits of land management practices</td>
<td>Protocol to report environmental services benefits</td>
<td>Consult with Federal and State government agencies and nongovernmental interests including farm, ranch and forestry producers; financial institutions involved in environmental services trading; academic institutions; NGO’s; and private sector representatives</td>
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<td>+</td>
<td>Registry to collect, record, and maintain benefits measured</td>
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<td>+</td>
<td>Process to verify benefits registered</td>
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USDA Priorities

• Work with those setting rules and regulations to facilitate participation of farmers and rural landowners
• Demonstrate, test and finance approaches
• Develop guidance and tools
• Communicate benefits
• Integrate market-based approaches into USDA programs
• Incorporate trading opportunities in 2014 Farm Bill programs
Metrics, Tools and References
Improving Consistency and Removing Barriers

- Science-based
- User-friendly
- Meaningful
- Appropriate
- Consistent
- Accepted
- Meet regulatory criteria

Example: NRCS’ conservation practice standards
Farm Bill investments in metrics facilitate market-based approaches and improve programs

Example: FSA Conservation Reserve Program (CRP) performance data

CRP improves water quality.
• Prevented 226 million tons of sediment, 623 million pounds nitrogen and 124 million pounds phosphorus from leaving the field.

CRP enhances wildlife habitat.
• Independent studies identified benefits to Prairie Pothole ducks, ringed-neck pheasants, sage grouse, northern bobwhite quail, and other grassland birds.

CRP sequesters carbon.
• Sequestered 51 million metric tons CO2
Nutrient Tracking Tool (NTT)

• NTT was built for Nutrient Trading
• It is a user friendly, web-based interface for Agriculture Policy Extender (APEX) Data provisioning is automated to Area of Interest (AOI):
  - 50 years of daily time step data
  - Soil information from web soil survey
  - Agronomic information from LMOD
Nutrient Tracking Tool (NTT)

NTT calculates the output of the APEX model in terms of \textit{delta} products or the difference between existing conditions and proposed conservation.

\[
\text{Existing Condition} - \text{Proposed Conservation} = \text{Nitrogen and Phosphorus Saved}
\]
Market Infrastructure
Reducing Uncertainty

• Transparent
• Guidelines
  • eligibility
  • baselines
  • verification protocols
  • registry design for tracking credits
• Demonstrations
• Analysis and Evaluation
  • Coordinate agencies, tribes, and stakeholders

Example: NRCS’ Conservation Innovation Grants (CIG)
Some Examples...

Farm of the Future

Baselines in Environmental Markets: Tradeoffs Between Cost and Additionality

In It Together:
A How-To Reference for Building Point-Nonpoint Water Quality Trading Programs

Measuring Up:
Synchronizing Biodiversity Measurement Systems for Markets and Other Incentive Programs

FACT SHEET
United States Department of Agriculture
Agricultural Research Service

Nutrient Tracking Tool
http://nn.tarleton.edu/NTT/
New USDA - EPA Partnership

Collaborate on tool and information resources, to guide decision making, program design and implementation, improve environmental performance, and foster appropriate consistency and integrity across regional trading initiatives.
Nutrient Trading Program

Decision Making Tools

• CCAs, TSPs and others trained in nutrient management plan development
• Credit Calculators
• Credit Trading Rules

Water Quality Trading How-To Manual

Summary of “A Water Quality Trading Framework for Wisconsin” and “Guidance for Implementing Water Quality Trading in WPDES Permits”
Opportunities for Consultants

Practice Design and Implementation

Models
- Infield
  e.g. NTT
- Field to Stream
- Watershed
  e.g. Chesapeake Bay Model

Field Data and Monitoring

Reporting
Verification
USDA Relationship with Consultants

• Voluntary
• NRCS or producers can contract for services
• Begins with TSP certification
• There are many certification categories, each has national standards that set minimum proficiency criteria
• Cost-share payments are available to assist producers cover TSP costs
Questions?
Where Can You Find Out More About Nutrient Trading and other Markets for Ecosystem Services?

http://www.usda.gov/oce/environmental_markets/