Characteristics of Voluntary Programs addressing Nonpoint Source Pollution

Naveen Adusumilli
Extension Economist
LSU AgCenter

LWRRI Annual Meeting
March 27, 2018
Agricultural pollutants from the Mississippi River Basin

Sources of nutrients delivered to the Gulf of Mexico

PHOSPHORUS
- Corn and soybean crops: 37%
- Other crops: 12%
- Pasture and range: 8%
- Urban and population-related sources: 18%
- Atmospheric deposition: 25%
- Natural land: 4%

NITROGEN
- Corn and soybean crops: 52%
- Other crops: 16%
- Pasture and range: 9%
- Urban and population-related sources: 14%
- Atmospheric deposition: 5%
- Natural land: 4%


Reduction in net farm income: $4 to $8 billion per year from loss of soil and input overuse
Change in U.S. planted acres for major crops between 2000-02 and 2010-12

Note: Average planted acreage for the 3-year period 2010-12, compared with the 3-year period 2000-02.
Net Change in Land Cover/Use between 1982 and 2012
Thousands of Acres

- Cropland: -57,861.5 acres
- CRP Land: 24,222.0 acres
- Pastureland: -10,150.9 acres
- Rangeland: -13,579.3 acres
- Forest Land: 3,048.6 acres
- Other Rural Land: 2,672.5 acres
- Developed Land: 42,187.1 acres
- Water Areas & Federal Land: 9,461.5 acres

Source: 2012 National Resources Inventory, NRCS, USDA.
Programs to address NPS

- The Clean Water Act
- NRCS
  - EQIP
  - CRP
  - CSP
- USGS
- Individual State Programs

Major USDA conservation program expenditures, 1996-2015

Notes: Working land programs include the Environmental Quality Incentives Program, the Conservation Stewardship Program, Conservation Technical Assistance, and predecessor programs. Predecessors of the Agricultural Conservation Easement Program include the Wetland Reserve Program, Farmland Protection Program, and part of the Grassland Reserve Program. Other programs include Voluntary Public Access, Healthy Forest Reserve Program, Agricultural Management Assistance, and watershed programs.
Erosion Rate on Cropland, by Year
Tons per Acre per Year

(Cropland includes cultivated and noncultivated cropland)

Source: 2012 National Resources Inventory, NRCS, USDA.
Percent of Planted Acres in various Tillage Practices

- Mulch-Till
- Ridge-Till
- No-Till
- Reduced-Till
- Conventional-Till

Total acres: Approx. 290-300 million; Data Source: Crop Management Survey
Where is conservation going......

CRP Land Conversion to Other Land Uses, 2007 to 2012
Thousands of Acres and % of Total Pie

CRP Land in 2007

CRP Land in 2007 and 2012
23,277.1
72%

CRP Land Converted to Other Land Uses
9,186.9
28%

Other Land Uses in 2012

Pasture
3,097.8
34%

Cropland
5,480.6
60%

Range
249.7
3%

Forest
319.2
3%

Other Rural
26.5
0%

Developed, Water & Federal
13.1
0%

Source: 2012 National Resources Inventory, NRCS, USDA.
From 2005 to 2013, an increasing focus on the cover crop practice in USDA’s Environmental Quality Incentives Program has mirrored a declining focus on the no-till practice.

![Graph showing the obligated dollars for no-till and cover crops over fiscal years 2005 to 2013.](image)

Millions of dollars obligated (nominal)

Incentives

Economic Incentives
- Taxes or subsidies on inputs and technology
- Nutrient trading
- Cost-share programs
  - EQIP, CRP(PIP), CSP

Education
- Conservation programs
- Healthy Soils Initiatives
- State Programs
  - LSU AgCenter Master Farmer Program

Regional Conservation Partnership Program

- Shiftail Canal Watershed Project
- Bayou-Pierre Watershed Project
Challenges and May be.....

• Voluntary programs are encouraged - Appropriate levels of programs are difficult to identify – economic efficiency dominates

• The relationship between agricultural production and damages to and from water quality are complex – markets rule the decisions

• Developed lands are yet to be accounted
Thank you

Naveen Adusumilli
Extension Economist, LSU AgCenter