Tri-National Initiative On Environmentally Sustainable Agriculture and Water Quality

Environmentally Sustainable Agriculture Water Policy: The North American Experience

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Country Frameworks for Environmental Policies

• Individual policy instruments are applied in the context of an overall framework of conservation and environmental policies.

• The nature of this framework, and the degree to which it allows coordination between individual policies/programs and between different layers of government (Federal/state/local), can have an impact on the effectiveness of different policy instruments.
México

• National Plan of Development – “Mexico’s Vision in 2025”
  – Recognizes the value of water as a strategic element for basic needs, economic development, and environmental preservation

• National Association of Water Users, A.C. represents 546,549 users
Collaboration between federal (national), provincial and territorial (sub-national)

- Federal Government
  - Agricultural Policy Framework (APF) – environment element
- Provincial Governments
  - Agreements to implement APF
  - Biodiversity Action Plans
  - Province-specific water policies
- Non-governmental Organizations
  - Third party agreements to deliver environmental programs or activities
  - Additional environmental goals or policy statements
United States

United States Department of Agriculture (USDA) implements a broad range of conservation programs, many originate through Farm Bills

• Voluntary programs offering technical and financial assistance
  – Federally funded, locally implemented
  – Supported by research and education

• Environmental Protection Agency promulgate and enforces federal regulations
Policy Instruments

**Focus:** Policy instruments that promote environmental sustainability relative to agriculture and water quality

- Education & Decision Support
- Technical Assistance
- Financial Assistance
  - Cost-share and incentive payments
  - Land retirement contracts
  - Market-based incentives
  - Taxes and user fees
- Compliance mechanisms
- Regulatory requirements

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Education & Decision Support

Instruments aimed at improving conservation practice implementation by raising the awareness of farmers

• Assumes:
  – Not fully aware of the operational impact on water resources
  – Not fully aware of alternatives
  – Adoption likely upon having complete information

• Methods
  – Demonstration projects
  – Newsletters
  – Seminars
  – Field days
  – Internet

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Education & Decision Support

- **Mexico** - focus is on reducing water losses during distribution and application, and solving drainage and soil salinity problems
  - Forming alliances with institutions near water resources
  - Focus on critical areas with scarce resources
- **Canada** - utilizes various forms of education and decision support tools to encourage farmers to adopt beneficial farming practices including:
  - APF programming – EFPs, NLWIS, NAHARP
  - Specialized newsletter, brochures, reports, internet material, field demonstrations, and peer advisory programs
- **United States** - extensive education outreach efforts through:
  - Cooperative Extension Service system, Natural Resources Conservation Service field offices, Soil & Water Conservation Districts, and Non-governmental organizations (NGOs)
Technical Assistance

Hands-on, direct assistance to land owners and farmers/ranchers who are ready, willing, and able to implement new conservation practices and technologies

• One-on-one personal interaction
• Greater resource needs from conservation agencies
• Management skill level of the farmer/rancher is important to success

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Technical Assistance

- **Mexico** - successful technical assistance is based on:
  - Profitable, environmental friendly technologies
  - Training for producers
  - Agro industry support
  - Marketing and information

- **Canada** - There are numerous initiatives in place at the federal and provincial/territorial levels in Canada that contribute to the development and delivery of technical assistance to address water constraints in agricultural areas including:
  - National Farm Stewardship Program
  - Work of the Prairie Farm Rehabilitation Administration
  - Alberta Environmentally Sustainable Agriculture Program

- **United States** - Partnerships between the Federal government, conservation districts, States, and local entities drive the application of technical assistance for locally-led solutions
Financial Incentive-Based Policies

Providing a positive/negative monetary incentive/disincentive to encourage/discourage environmentally beneficial activities

- Cost-share – percentage of the cost of a practice
- Incentive Payments – payment to encourage management practices, not always based on cost
- Land retirement contracts – retiring environmentally sensitive land from crop production
- Market-based – industry demand, ag supplied
- Taxes and user fees – per unit charge for contribution to environmental degradation

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Financial Incentives

• **Mexico**
  – Program of Adaptation of Rights to Water Use
    • Compensation for renounced water rights
  – Program of Payment for Hydrological Environmental Services
    • Forest owners are compensated for conservation of vegetation with filtration effects

• **Canada**
  – Federal and provincial governments share program costs as a result of shared jurisdiction
  – EFPs can lead to technical and financial assistance eligibility through the National Farm Stewardship Program and Greencover Canada Program.

• **United States** - Financial incentives have increased substantially and utilize a suite of voluntary conservation programs:
  – Cost-share payments, incentive payments, stewardship payments, working lands easements, land retirement contracts, and grants
Compliance Mechanisms

Requires a basic level of environmental performance as a condition of eligibility for participation in other agricultural programs

• Payments for protection
• Increases technical assistance needs
• Removes inconsistencies between income support programs and conservation programs
Canada - Compliance

• EFPs are required for financial incentives
• Québec’s *Finaciére agricole* – on-farm agricultural phosphorous reports are a required condition for funding eligibility
United States - Compliance

• Food Security Act of 1985
  – “Conservation Compliance” (reducing soil erosion)
  – “Swampbuster” (discourage draining wetlands)
  – “Sodbuster” (discourage conversion of grasslands)
• 91 million acres are subject to conservation compliance
Regulatory Requirements

- Not voluntary
- Significant threat to public safety or environment (DDT)
- Required beneficial practice (nutrient management plan for CAFO)
- Strong enforcement needed

Required improved environmental performance
Mexico – Regulation

• Law of Sustainable Rural Development (SAGARPA)
  – Guidelines regarding needs

• Law of National Waters (CONAGUA-IMTA)
  – Control over water use

• General Law of Ecological Balance and the Protection of the Atmosphere (SEMARNAT)
  – Uses sanctions to repair any environmental damages
Canada - Regulation

Water responsibilities in Canada are shared and complex

– Key Federal acts in Canada include:
  • Canada Water Act
  • Canadian Environment Protection Act
  • Fisheries Act

– Provinces have traditionally taken the lead for the management of groundwater and surface water resources.
United States - Regulation

- Environmental Protection Agency (EPA) administers regulation – *Clean Water Act (1972)*
  - Nonpoint Source Program
  - Concentrated Animal Feeding Operations (CAFOs)
  - Total Maximum Daily Load (TMDL)
  - Section 404 – protects wetlands
- *Coastal Zone Management Act (1990)*
- *Endangered Species Act (1973)*
- State regulations

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Recommendations: Role of Research

- Program success can be tied to a strong research program that is geographically diverse and closely tied with the program agencies.

- Local research labs, centers, and Universities provide support for practices and implementation efforts.

- The development of “complementary” technologies allow for both achievements in water quality and higher net returns.
Recommendations: Coordination of Instruments

- Success is enhanced when education, technical, and financial assistance are offered in a coordinated fashion
- A “portfolio” approach enhances flexibility
- Be wary of linking technical assistance (voluntary tools) too closely with regulation
Recommendations: Coordination of Policies

• Overarching frameworks help coordinate policy instruments for promoting and protecting water resources
  – Agricultural Policy Framework – Canada
  – Farm Bill – U.S.
  – National Plan of Development – Mexico

• Continued coordination is needed for programs that lie outside of the framework
Future Trends

• Mexico – a mix of programs is key
  – Rehabilitation and conservation is not an expense, but an investment

• Canada – Ecological Goods and Services (EG&S)
  – Market-based water quality trading

• United States – market-based approach
  – Point/non-point source credit trading for water quality
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Thank You