Drivers and Resistors – Unpacking Land Use Decision Making
Part I

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Background

• Northern great plains – management for production of agricultural commodities, private property.

• Wetlands a prominent feature of managed landscapes – significant loss and degradation of wetlands.

• Wetlands source of many ecosystem services – public and private.
Drivers of land management

• Land management decision making is influenced by:
  • Markets
  • Policies
  • Farmer attitudes to financial performance
  • Farmer attitudes to risk
  • Farmer attitudes to resource stewardship
Economic context for land/wetland management
Figure. Saskatchewan average farm size (rented and owned land), and average land owned, 1921 to 2011.
Sources: Statistics Canada, Selected Historical Data Census of Agriculture
New Trimble technology helps manage water: GPS-guided dozer blades can help contour fields prone to ponding and flooding
Grainews, March 6, 2018

Do-it-yourself tile drainage combine easy-to-use GPS technology with high land prices - more Manitoba farmers are installing their own tile draining
Grainews, April 29, 2014
Area of Wetland Drainage

- Marginal cost of wetland drainage
  - MC wetland drainage (tech change)
- Marginal benefit of wetland drainage
  - MB wetland drainage (large field equip)

Cost

Area

Area of Wetland Drainage
• Strong monetary drivers of wetland drainage and degradation – Cortus et al., (2010) estimated the annual average net benefit from draining wetlands in eastern Saskatchewan at $28 - $41/ha.

• Impact of wetland conservation contracts, wetland easements or other restrictions to wetland removal on land values (e.g. Lawley and Towe, (2014) average land parcel with conservation easement sells for a discount of $86/acre for every eased acre).
Policy Challenge – structured incentives

• Balance the provision of agricultural commodities and other ecosystem services – meeting social preferences

• Policy informed by understanding the distribution of costs and benefits of wetland management (conversion/conservation/restoration):
  • private benefits and private costs
  • public benefits and public costs
Payment for Wetland Ecosystem Service – Social Responsibility

• Clarifying the public and private preferences on social responsibility can enable a more supported payment program (Dias and Belcher, 2015).

• Landowner or societal responsibility for the cost of wetland preservation.
  • Landowner should have greater responsibility – 19%
  • Society should have greater responsibility – 51%
  • Society and landowner should equally share responsibility – 30%

• Respondents supportive of public contributions to the provision of wetland ecosystem services on private land:
  • 75% agreed that public policy can help landowners
  • 88% agreed that government should allocate more money to improve natural areas and environmental quality in province.
Policy Instruments -

A. Regulatory Measures –
✓ often involving legal processes (e.g. fines, suspension of license to operate)
✓ requires investment in monitoring and enforcement

B. Economic Instruments
✓ Conservation Payments - BMPs
✓ Markets/Tradable rights

C. Extension and advisory measures
✓ Research and development
✓ Technical assistance/extension
✓ Community-based measures
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Transactions Costs Matter
- Landowner and farmer participation and/or compliance with wetland conservation policy instruments:
  - Fit with farming system and land management (e.g. farm size, equipment size, farm production, livestock) (Yu and Belcher, 2011).
  - Duration and flexibility of wetland conservation contract.
  - Age, education, succession plan
  - Environmental attitude, wetland perceptions
  - The category of ecosystem service targeted – water quality, water quantity, biodiversity, recreation etc. (Broch et al., 2013; Dias and Belcher, 2015).
  - Farmers may not want more of an environmental feature where there is already an abundance of that feature (Broch et al. 2013).
Thank You