

Drivers and Resistors – Unpacking Land Use Decision Making Part I



UNIVERSITY OF SASKATCHEWAN
College of Agriculture
and Bioresources
DEPARTMENT OF AGRICULTURAL
AND RESOURCE ECONOMICS
AGBIO.USASK.CA

**Ken Belcher, Department of Agricultural and Resource Economics
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Background



Source: www.realagriculture.com

- 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.

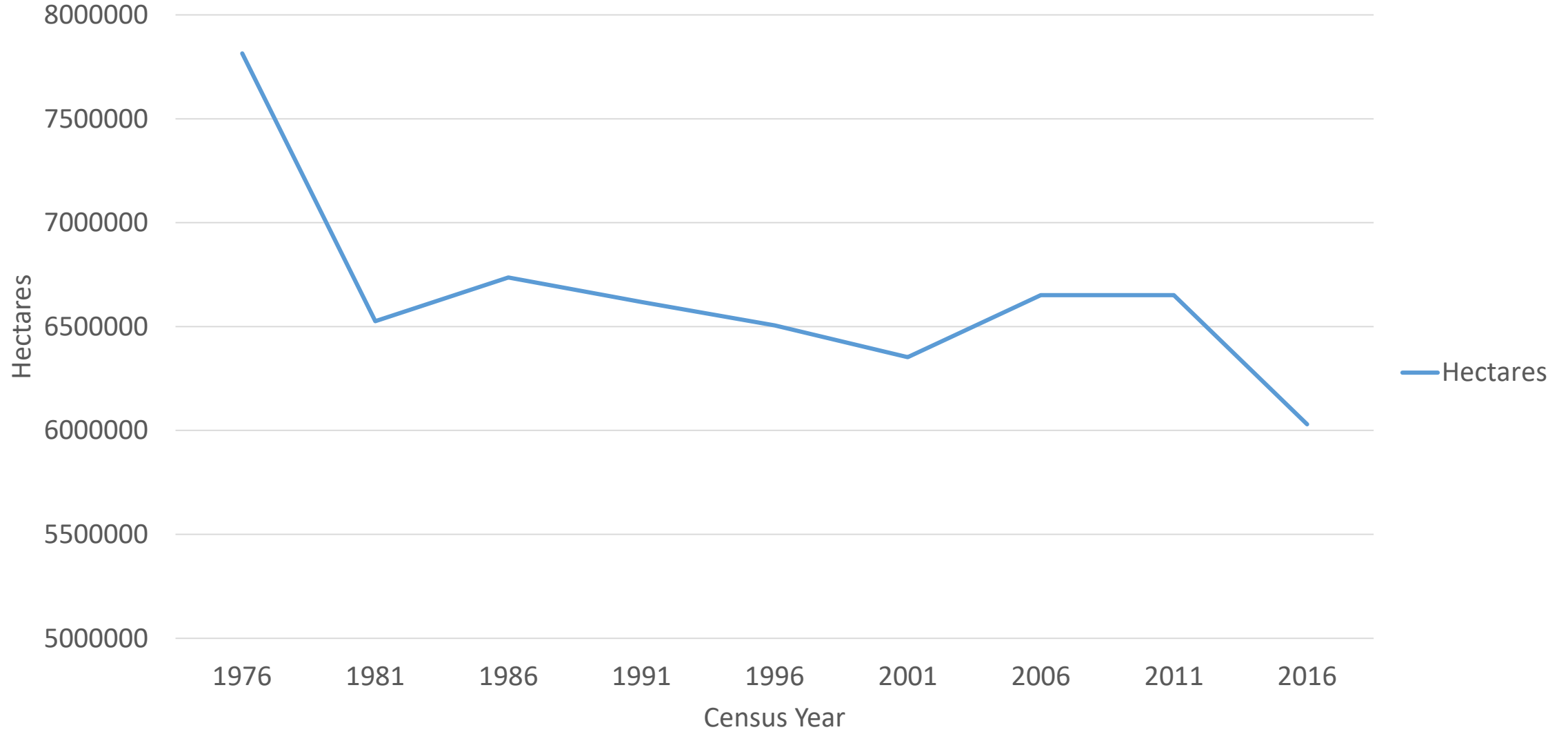


Drivers of land management

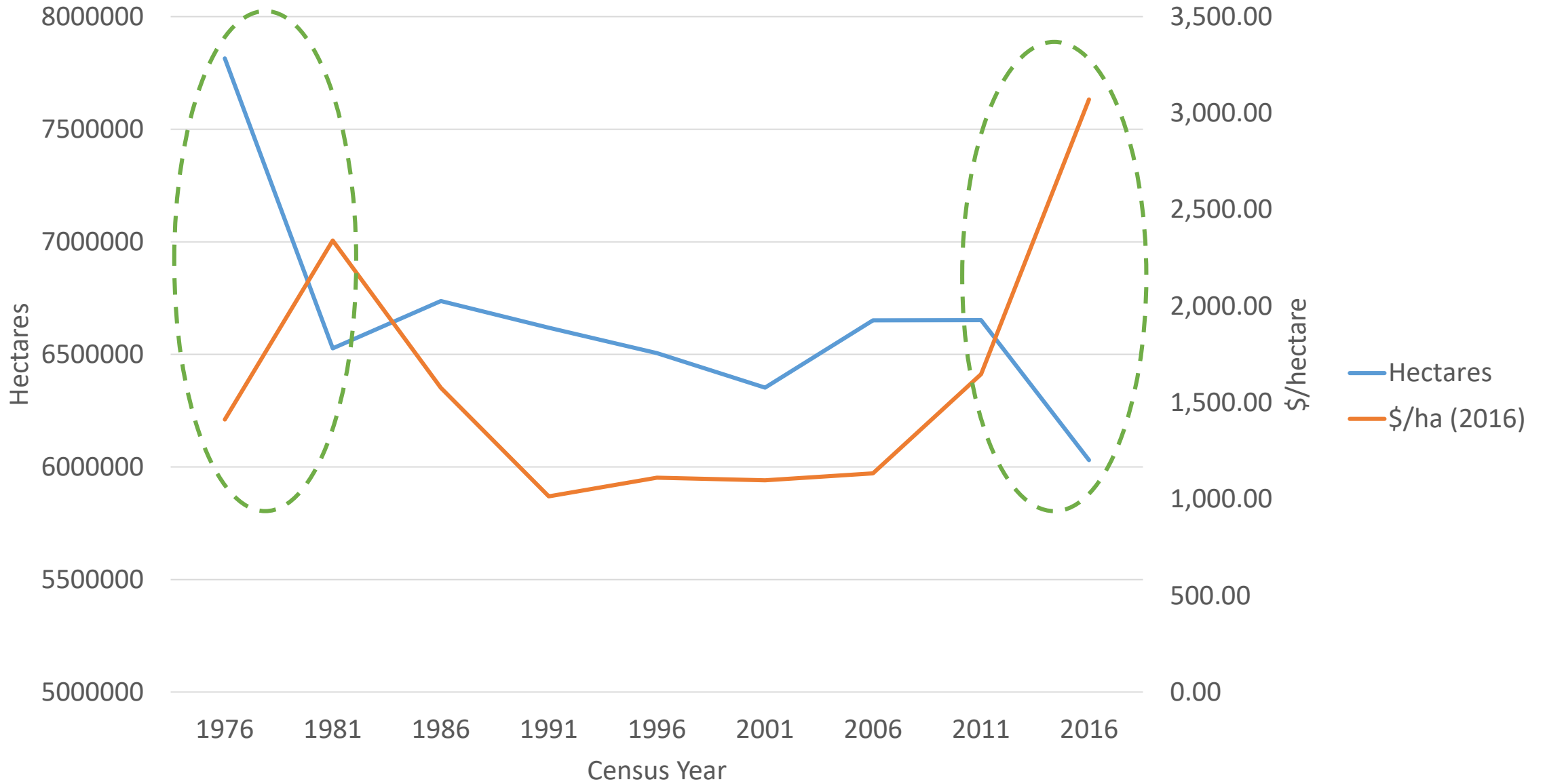
- Land management decision making is influenced by:
 - Markets
 - Policies
 - Farmer attitudes to financial performance
 - Farmer attitudes to risk
 - Farmer attitudes to resource stewardship

Economic context for
land/wetland management

Native Cover - Saskatchewan

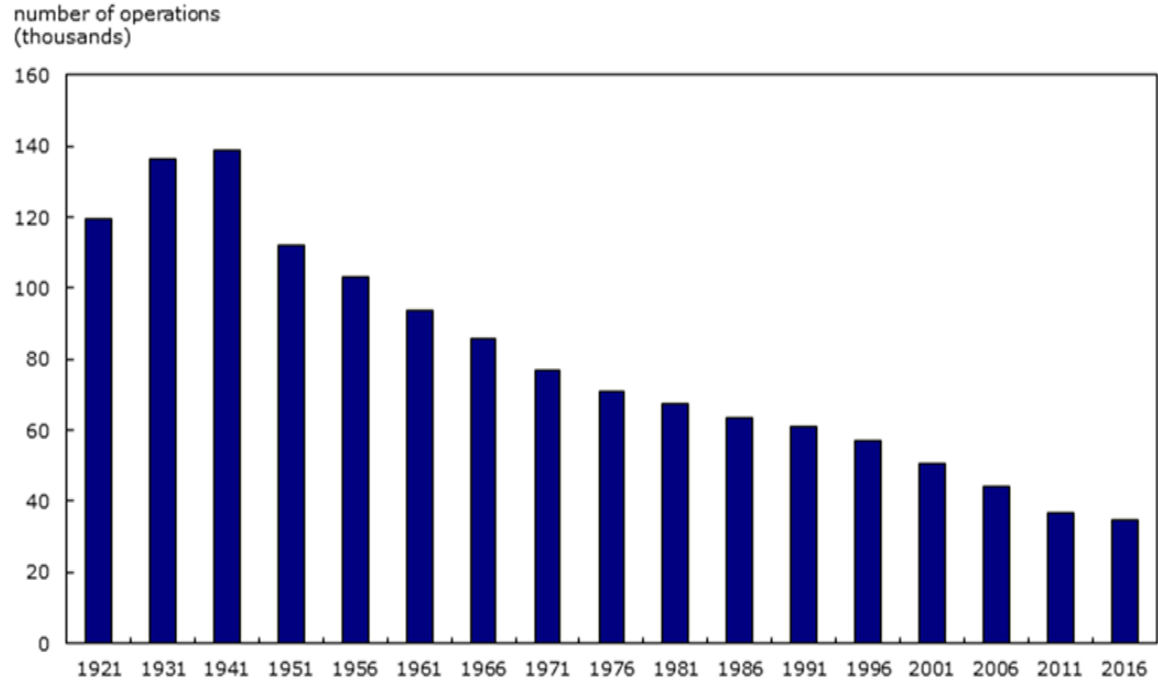


Native Cover and Land Values - Saskatchewan



Economic Drivers - Costs of field operations

Chart 2
Total number of agricultural operations, Saskatchewan, 1921 to 2016



Sources: CANSIM tables 004-0002 and 004-0204.

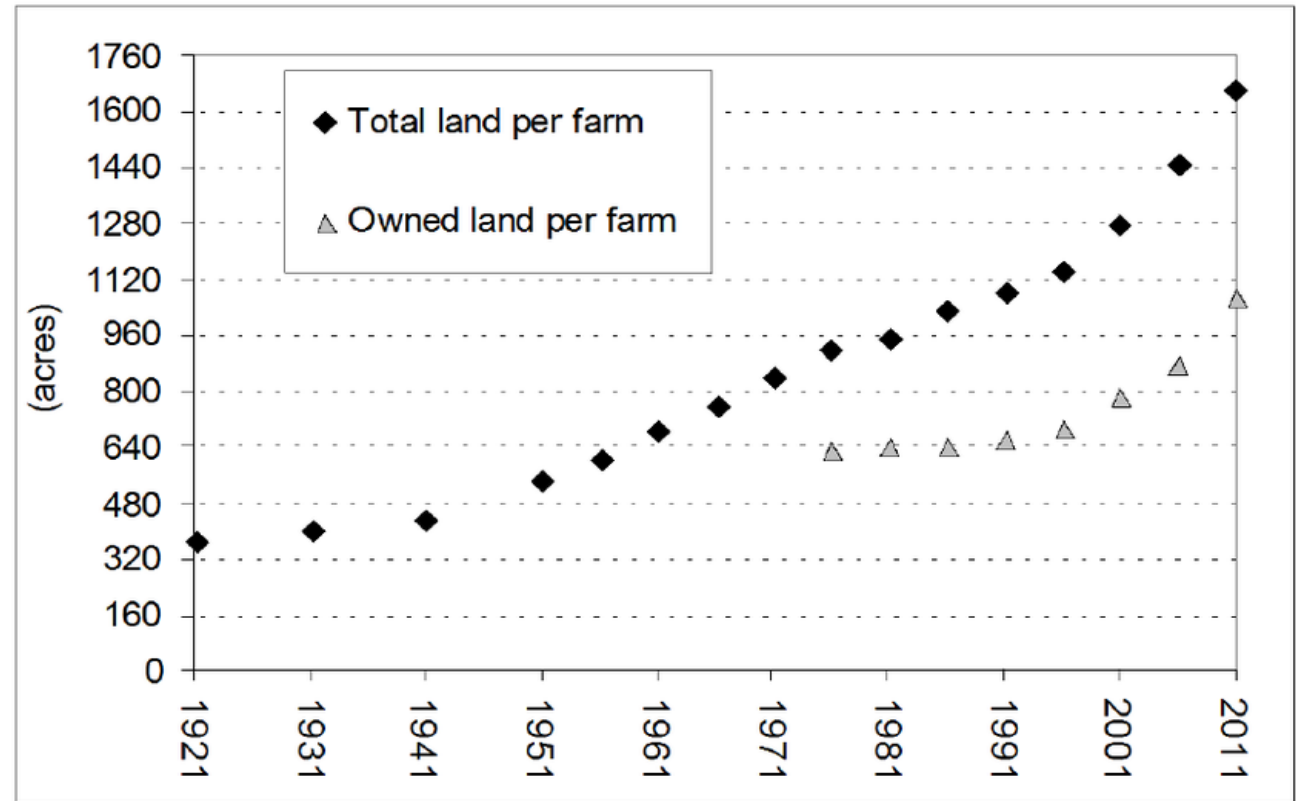


Figure. Saskatchewan average farm size (rented and owned land), and average land owned, 1921 to 2011.

Sources: Statistics Canada, Selected Historical Data Census of Agriculture



Economic Drivers - Costs of wetland drainage

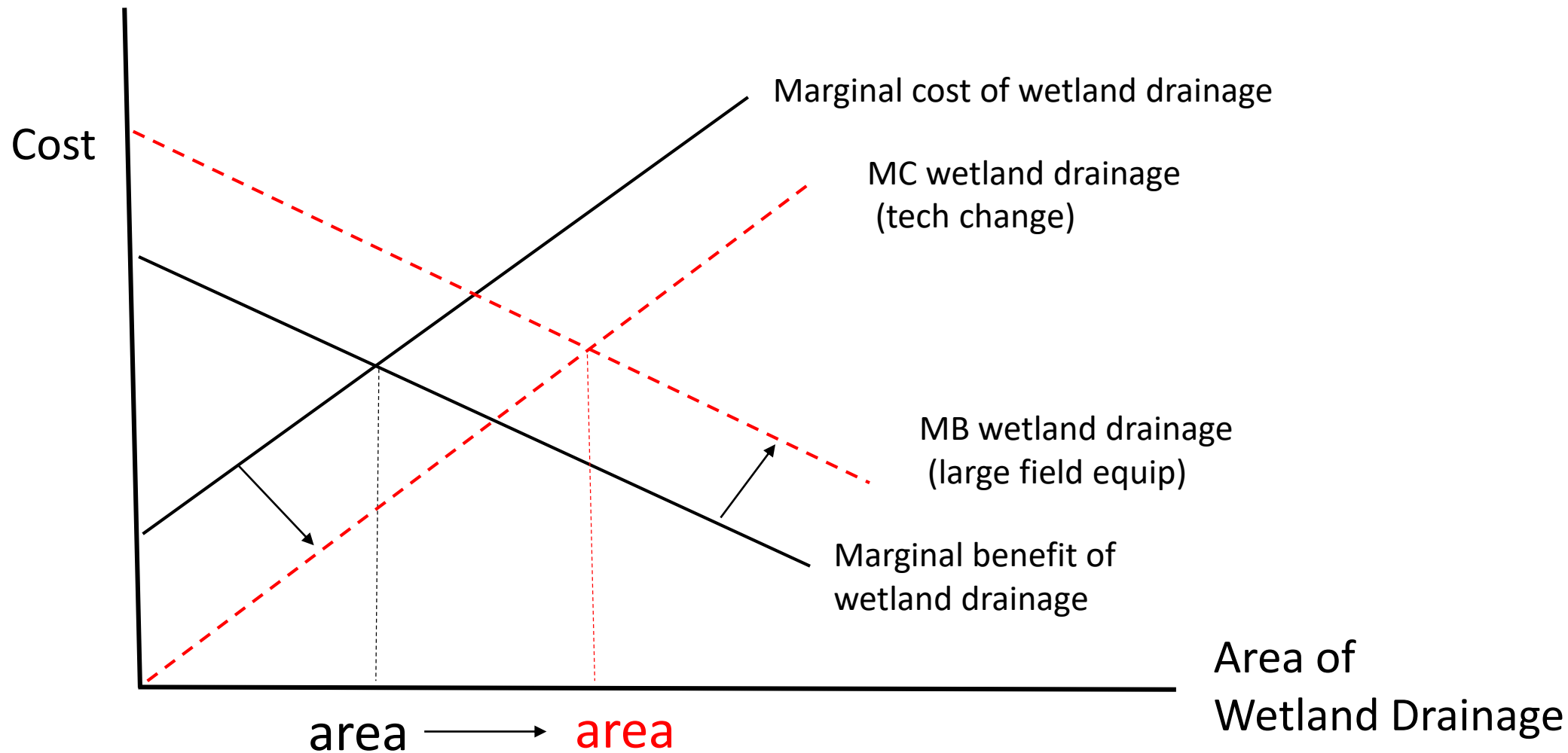
**New Trimble technology helps manage water:
GPS-guided dozer blades can help contour fields prone
to ponding and flooding**

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





- 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).

A photograph of a herd of black cattle in a rural landscape. The cattle are gathered in a field of dry, yellowish-brown grass. In the background, there are several bare, leafless trees and a blue body of water, possibly a pond or a small lake. The sky is clear and blue. The overall scene is peaceful and rural.

Thank You