Adapting agriculture to a changing climate

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OUTLINE

- Current Prairie climate change situation
- Changes made on own operation
- Potential opportunities/threats
  - Unconventional agriculture
  - Livestock production
  - Grain & bio products production
- Closing comments

Current situation

- Successes
  - Integrated Crop Management Systems
    - Improved nutrient management
      - Less mining of organic matter & retention of soil structure
      - Over application of nutrients (manure & synthetic fert)
    - Manure management standards (ie injection)
    - Tillage reduction
    - Healthy crop rotation
  - Mechanical Technology
    - GPS & Precision Farming
    - Low disturbance openers

Current situation

- Struggles
  - Confusion over environmental issues
    - Mixed/opinionated information
  - Financial constraints to improve current practices
    - Farmers want to do the right thing!
    - Easier access to capital for greener sustainable agriculture systems
  - Financial mitigation opportunities are ambiguous
    - Carbon credits
      - Too simple a solution for a complex problem
      - Not nearly comprehensive enough
      - Questionable creditability and protocol

CHANGES IN OWN OPERATION

- Consideration for bio diversity
  - Natural vegetation/wetlands
  - Weeds
- Conscious crop rotation
  - Pulses
  - Winter cereals
- Maintaining soil health
  - Minimizing leaching
  - Maintaining organic matter, microbial diversity, etc.

OPPORTUNITIES/THREATS

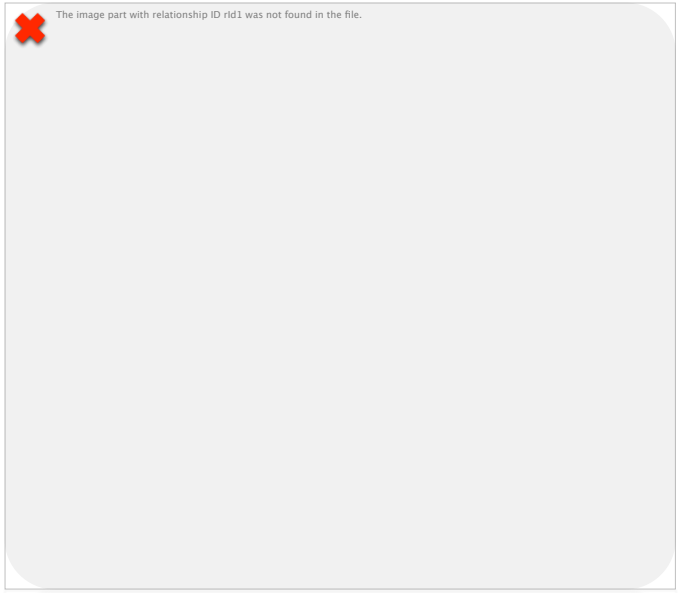
- Unconventional Agricultural Operations
  - Opportunities
    - Carbon sequestration (ie willows & babcus)
    - Wood lots
    - Mitigation plants
    - Phytoremediation (oil spill reclamation)
    - Upcoming farm income stabilization programs

OPPORTUNITIES/THREATS

- Unconventional Agricultural Operations
  - Threats
    - Delayed initial returns
    - Loss of short term cash flow
    - Conventional production loss
    - Affect on conventional farm program
    - System/approach adjustment

OPPORTUNITIES/THREATS

- Livestock Production
  - Opportunities
    - Methane capture & Biodigestors
    - Power generation
  - Threats
    - High initial costs/access to capital
    - Knowledge base
    - Alliances and partnerships required
    - Grid access
    - Technological advances
    - Finding best systems for application, global approach



Ref: Highland Feeders

Opportunities/Threats

- Grain & Bio Products Production
  - Opportunities
    - Non production related efforts become significant
    - Varietal advancements
      - Traditional crops in untraditional areas
        - Corn, soybeans and edible beans
      - Genetic and agronomic advances
      - Nitrogen fixating cereals

OPPORTUNITIES/THREATS

- Opportunities (continued)
  - Canadian Triticale Biorefining Initiative (CTBI)
    - New approach to:
      - Research
      - Processes
      - Implementation/commercialization
    - Broadly encompassing outcomes
    - Multi species platform
    - Emphasis on sustainability
      - Eg. Nutrient management, mitigation capability
    - Focus on Bio economy
    - International cooperation within network
    - Public/private sector collaboration

OPPORTUNITIES/THREATS

- Grain & Bio Products Production
  - Threats
    - Lack of collaboration for benefitting greater good
    - Understanding value of greater good
    - Knowledge of long term benefits
    - Status quo and existing paradigms are hard to change.

    - **Business as usual in Agriculture is over!!**
    - **Dawn of a new agricultural era has begun!**

Closing comments

- Awareness of agriculture's challenges in climate change issue!
  - Producers need to be conscious of their role in having an environmental impact
  - Consumers need to have perception adjustment on what is "environmentally sound"
    - Organic vs conventional production systems
      - Facts vs Fiction
  - Lots of opportunity to benefit agricultural through shifting climate change policies