Linking institutional and agricultural adaptation to extreme dry conditions in the Canadian Prairies

The case of the South Saskatchewan River Basin

Jeremy Pittman, Monica Hadarits, Greg Marchildon, Harry Diaz and Dave Sauchyn
THE SOUTH SASKATCHEWAN RIVER BASIN (SSRB)
Smit and Wandel, 2006; Ford and Smit, 2004
Vulnerability and Adaptation

• Dirty thirties (1930s)
  – **Vulnerability**: reliance on crops and practices unsuited to dry conditions
  – **Adaptation**: relief, relocation, and reclamation

• Development of new institutions
  – The Prairie Farm Rehabilitation Administration (PFRA)
  – The Special Areas Board

*Marchildon et al., 2008;
Marchildon et al., 2009;
Marchildon, 2009;
McLeman et al., 2010*
The PFRA: Reclamation

• Research, develop and encourage:
  – New crop types
  – Improved farming practices
  – Soil and water conservation techniques
  – Water infrastructure construction
    (dugouts, dams, wells, etc.)

Gray, 1996; Balkwill, 2002; Marchildon et al., 2008; Diaz et al., 2009
Recent Adaptation
WHAT’S BEEN HAPPENING ON-THE-GROUND?

“...most guys continuous crop.” – respondent, pers. comm., 2006
“...before we would always seed half and till half; now we chem-fallow half.” – respondent, pers. comm., 2006

- Minimum tillage
- Crop rotations
- Land tenure
- Dugouts, wells, dams
- Irrigation
- Diversification
- Crop insurance

PRODUCERS MANAGE RISKS/OPPORTUNITIES FROM CLIMATE, ECONOMICS AND INSTITUTIONS SIMULTANEOUSLY

Hadarits and Wandel, 2009; Pittman et al., in press
Recent droughts: 1988 and 2001-02

“...everybody wanted a small family farm because [they] wanted to keep [their] family close...and then we got beat up in the 80s. [In] 1988 we didn't take a combine out. We were pretty young. We survived it, but just. So we didn't put a whole lot of effort into making our kids continue in the path.” – respondent, pers. comm., 2006

“...2001 was a real wake up call for people and the costs of inputs were so high so it hurt people severely...” – respondent, pers. comm., 2006
Agricultural adaptation to date has occurred in a relatively ‘wet’ period for the SSRB

Martz et al., 2005; Axelson et al., 2009; Sauchyn et al., 2009
Future Adaptation

• The nationalization of PFRA: will barriers from competitive federalism be rebuilt?
• Need to preserve and transfer institutional knowledge of drought adaptation to facilitate learning and action
• Further develop institutions capable of facilitating adaptation on-the-ground by improving linkages with local communities

The Westside Irrigation Project is a project that was started in the 1960’s. It has been studied to death. It is known as the ‘Westside Story’. We have the music but we don’t have the lyrics yet. – respondent, pers. comm., 2006

Diaz et al., 2009
Acknowledgements

Social Sciences and Humanities Research Council of Canada
Institutional Adaptations to Climate Change Project (www.parc.ca/mcri)
Prairie Adaptation Research Collaborative (www.parc.ca)
Johnson-Shoyama Graduate School of Public Policy (http://www.schoolofpublicpolicy.sk.ca/)
The communities of Outlook, Cabri, Stewart Valley, Hanna, the Blood Tribe and Taber
Brett Matlock, Johanna Wandel, Gwen Young, Stephanie Jeannes, and Susana Prado

Thank you!