

Local Institutions and Adaptation to Climate-Induced Water Problems

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One of the main purposes of the IACC project.....

is to understand:

- (a) how vulnerable rural communities are to climate stimuli and the impacts of climate on water resources, and
- (b) the roles played by governance institutions in reducing this vulnerability

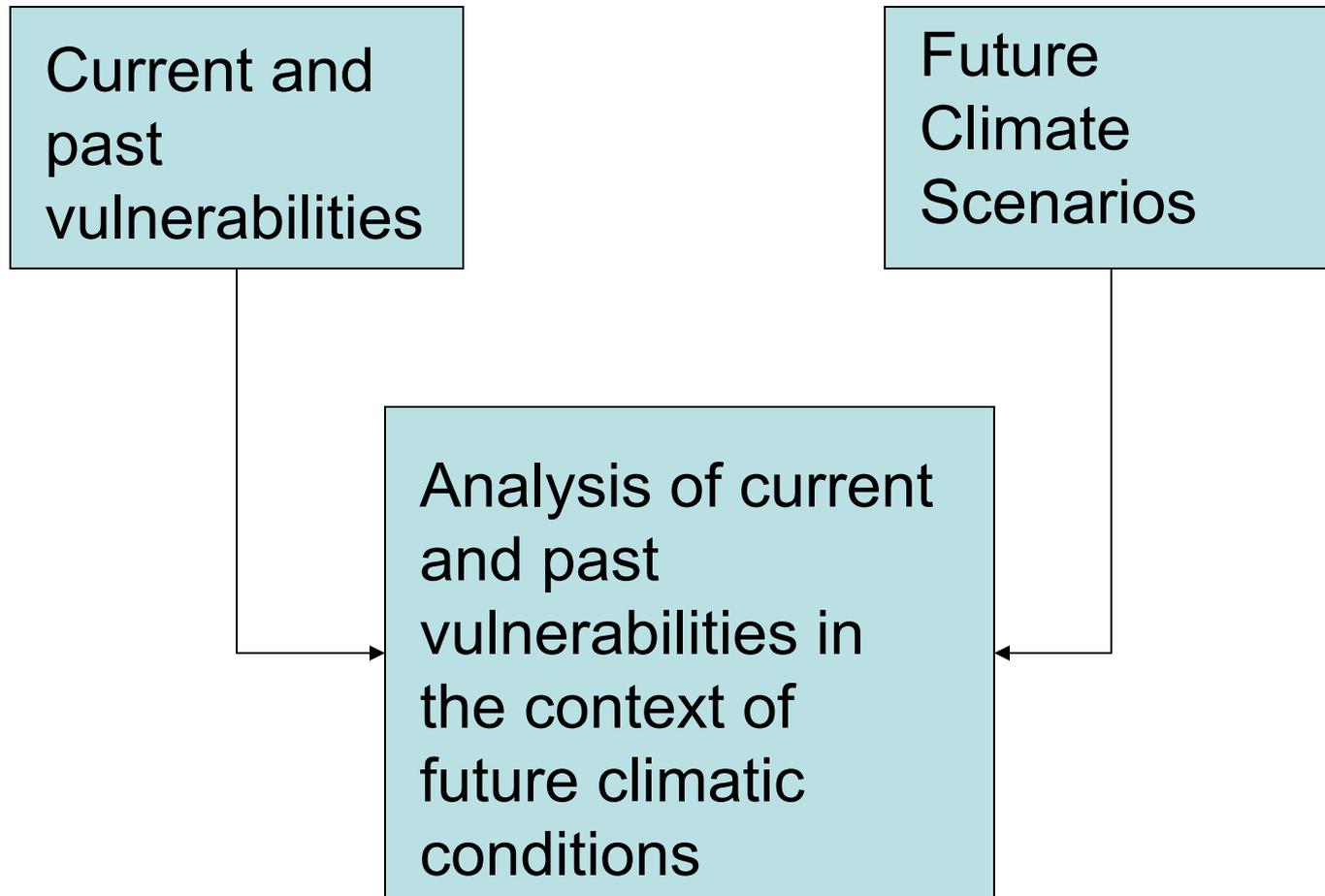
Outline

- Framework
- Study Area
- Exposures
- Adaptive strategies
- Conclusion

Vulnerability

- “The degree to which a system is susceptible to harm due to **exposure** to a perturbation or stress, and the ability (or lack thereof) of the system to cope, recover, or fundamentally **adapt....**”
(Burton, Malone and Huq, 2005).

The Vulnerability Approach

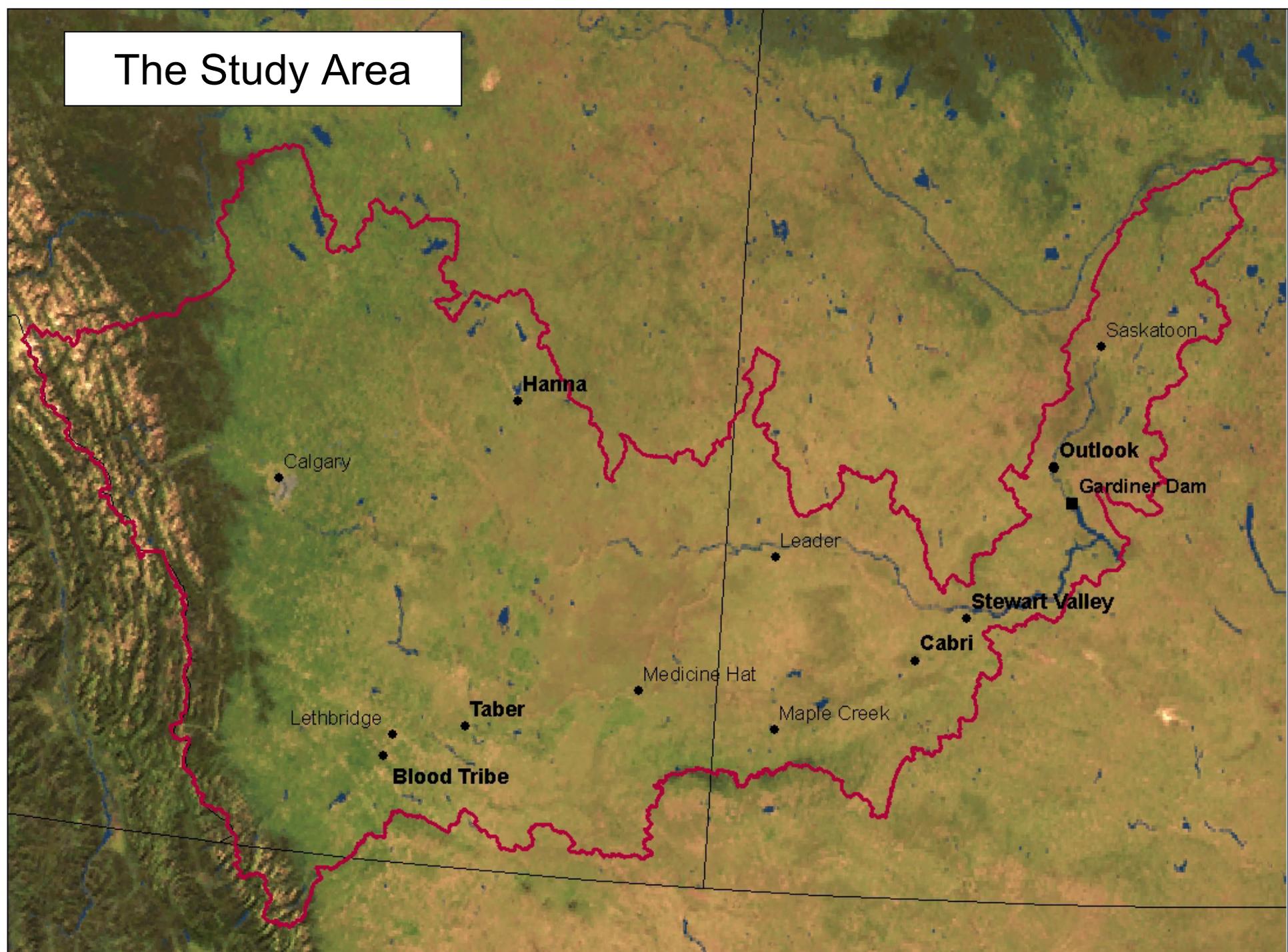


Objective of the community vulnerability assessment

To assess the current vulnerability of a group of rural communities in the South Saskatchewan River Basin, Canada and the Elqui River Basin, Chile:

- a. Identify past and current relevant conditions (**Exposures**)
- b. Document past and current strategies (and constraints) to deal with the conditions (**Adaptive Capacity**)

The Study Area



Organization of Research Activity

- Community selection
- Research Data Collection: (a) familiarization, (b) selection of key informants, (c) interviews, and focus groups, and (d) historical and climatological records
- Transcription of recordings and coding using qualitative data analysis software (NVivo)
- Complementary research activities: studies of specific climate related events, assessment of governance institutions, conflict management and study of historical cases

Exposures

- Environmental: drought (2001-2002), floods (Alberta), climate variability (late and early frost - hail - hot waves).
- Economic: high input costs and low returns, BSE, economic and political changes affecting rural life, fuel prices.
- Social: aging of the population, lack of alternatives for young people, access to basic services.

Adaptive strategies

- Water Management: water conservation programs for irrigation and community consumption, participation in irrigation projects, construction of reservoirs and dugouts
- Economic insecurity: income and enterprise diversification, crop insurance, expanding operations.
- Social problems: community social support networks, participation in formal organizations

Preliminary conclusions

- The existence of an internal adaptive capacity (water conservation programs, diversification, social capital) -- Is it enough? Is it fairly distributed? Is it possible to expand it?
- Vulnerable to extreme weather events (both lack of moisture and seasonally too much moisture are issues)
- Climate and water stresses do not exist in isolation, they are part of a set of stresses

Challenges

- **External.** Governance institutions: (a) legitimacy (provincial and federal governments are “too distant” to understand local conditions); and (b) the shortcomings of governance (lack of clear policies and priorities on water use and water management; too many institutions involved in water management; lack of integration, absence of information about government roles and responsibilities, and others).
- **Internal:** Aging of local population and out-migration.

Thank you!!