ADAPTIVE, MULTI-LEVEL LEARNING IN FLOOD RISK MANAGEMENT

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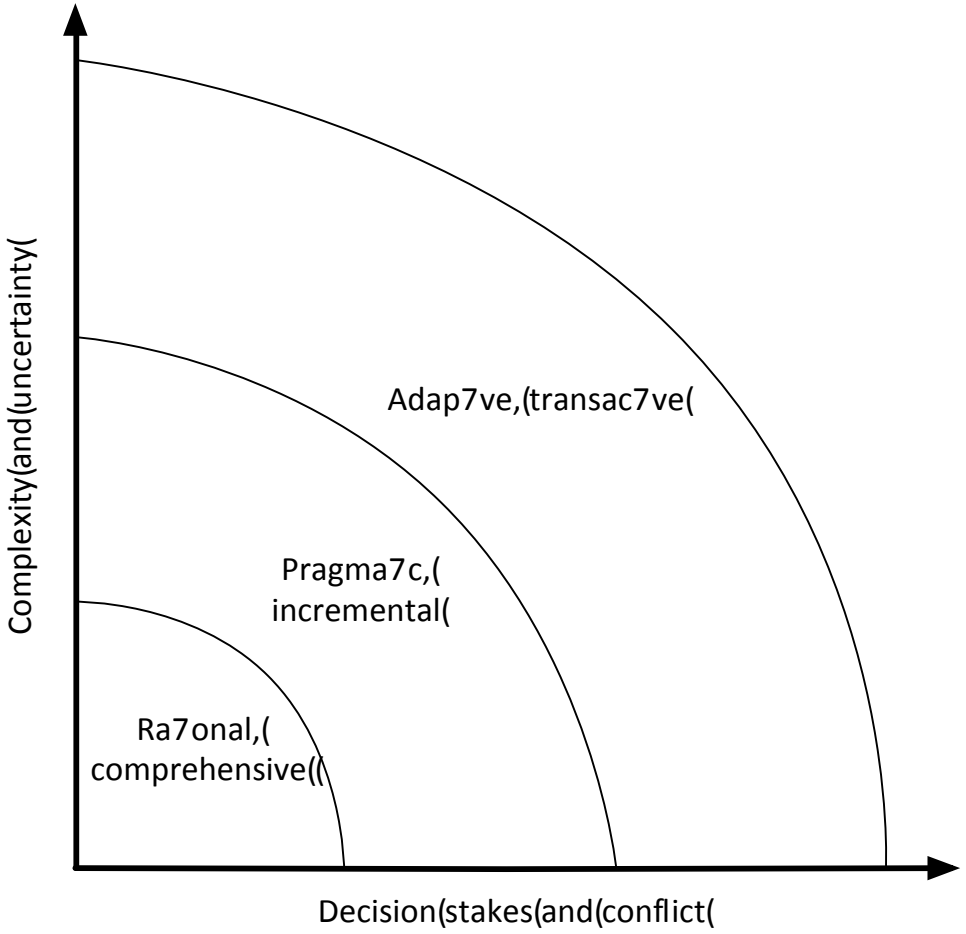
Outline

- Background
- Conceptual framework
- Purpose
- Methods
- Case study results
  - Context, Involvement, Learning
- Discussion
- Conclusion

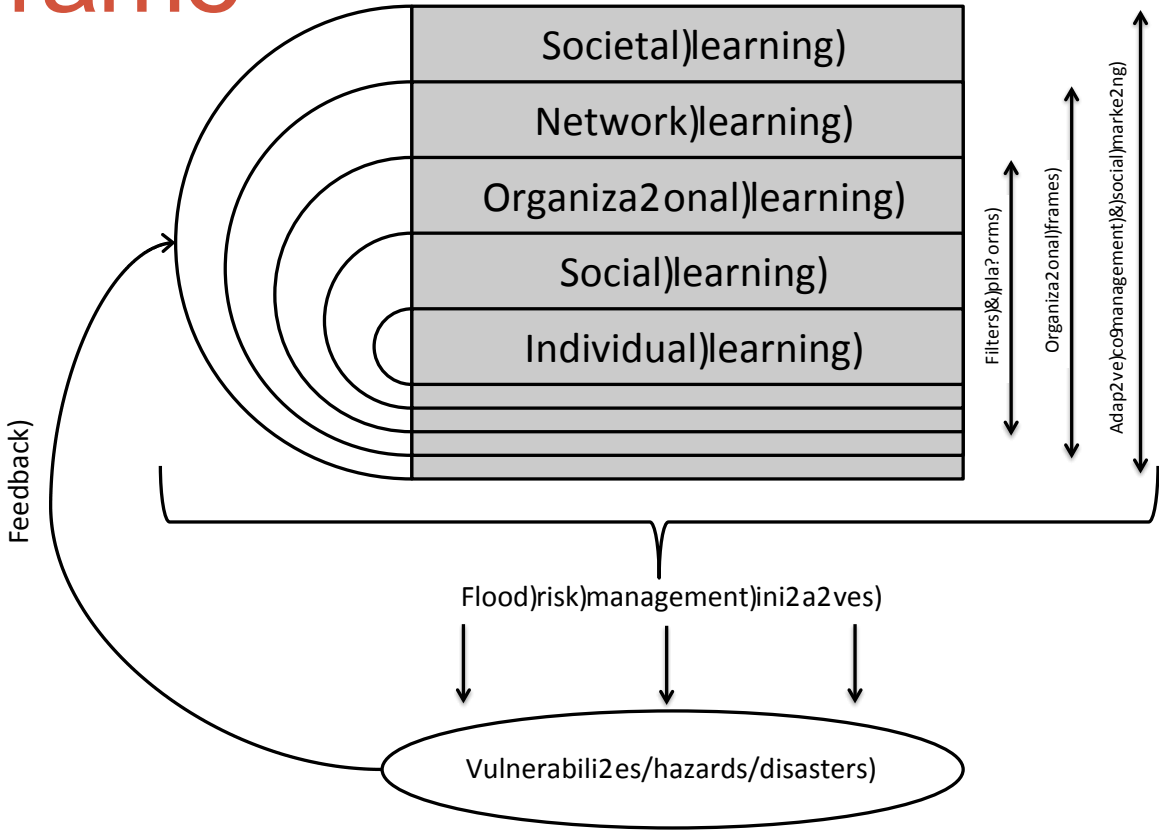
Background

- Flood risk management and complexity, uncertainty and conflict (after Funtowicz & Ravetz 1993)

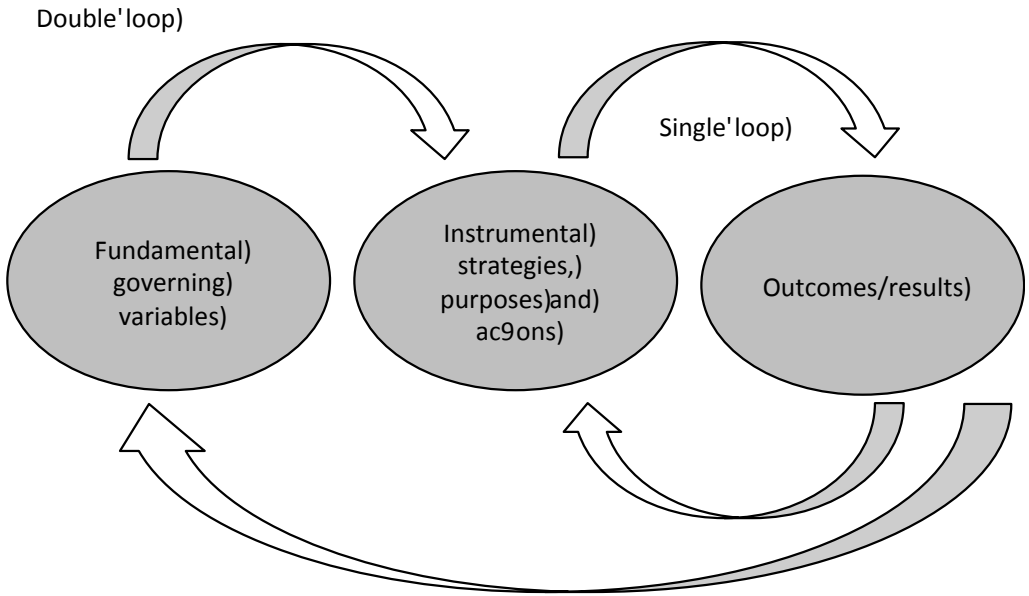


Conceptual frame

- Adaptive multi-level learning (Diduck 2010)



- Theory of action and organizational learning (Argyris and Schön 1978, Argyris 1990)
- People and groups learn from experience and create and act on organizational memory



Purpose

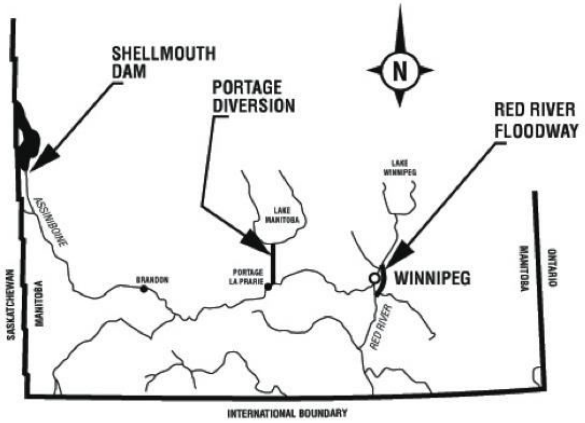
- Examine the implications of organizational learning through stakeholder involvement in flood risk management

Methods

- Integrative literature review (Torraco 2005)
- Qualitative, retrospective case study of a community-based organization (CBO) (Thomas 2011)
- 8 semi-structured interviews with 5 of CBO's leaders
- A review of nearly 400 organizational records
- Thematic coding (Creswell 2014) using QSR NVivo

Case study results: context

Red River Basin
(Diduck et al. 2005)



Structures built after the
1950 flood (MCEC 2005)

1997 flood level in
Winnipeg but for the
post-1950 structures

- CBO's baseline beliefs, goals and strategies
  - Believed that government actions to protect Winnipeg, although justified, worsened impacts outside the city
  - Wanted the government to acknowledge these impacts and provide compensation for them
  - Sought a comprehensive basin-wide management plan
  - Relied on administrative and political strategies
  - Organized its members, mustered evidence of its position, lobbied and made formal presentations to government

Case study results: involvement

- Five flood management initiatives from 1997 to 2005
  1. Hearings into operation of the floodway during the 1997 flood
  2. A proposal to build a dike along a provincial road
  3. A review of the floodway rules of operation
  4. Pre-feasibility studies to enhance flood protection for Winnipeg
  5. Environmental assessment of a proposal to expand the floodway

Case study results: learning

- Numerous manifestations in organizational memory of single-loop learning
  - Enhanced knowledge of, and trust in, other organizations with shared interests
  - Broader and deep technical knowledge of geography, hydrology, engineering, politics and law
  - Use of a wider array of tactics, including adversarial and legal avenues
- No evidence of double-loop learning

Discussion

1. “Standard” public involvement processes (Diduck et al. 2015) offer good opportunities for single-loop organizational learning (Fitzpatrick 2006)
2. Would more participatory processes have facilitated double-loop outcomes for CBO?
3. Unclear because CBO forged its governing variables in staunch opposition to government actions

4. Also unclear if more participatory processes would have led to double-loop learning by government agencies
5. Government learning can be far-reaching if it involves institutional reform (societal learning) (Woodhill 2002)
6. Adaptive co-management (Armitage et al. 2009) serves social goals of sustainability (Gibson et al. 2013)

Conclusions

1. The conceptual framework shows promise for analyzing learning and institutional change in flood risk management
2. However, the framework is highly abstract, and the case study is tentative and emphasizes just one level in the overall framework
3. Further research is needed to empirically test more of the framework's elements using various qualitative and quantitative methods

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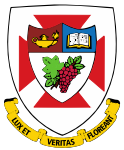

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