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Water Governance in the Face of Global Change: From Understanding to Transforming

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Guiding Research Questions

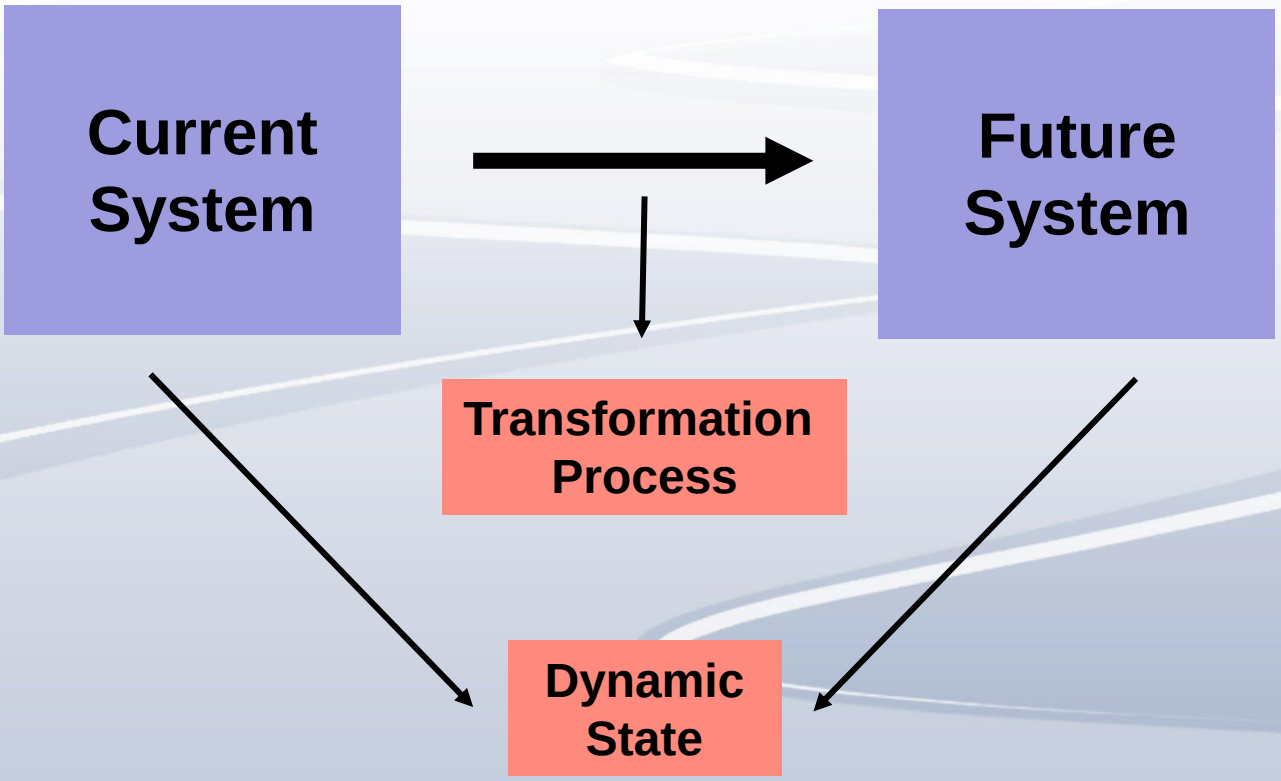
Which factors determine *adaptive and transformative capacity* of (water) resource governance and management systems?

What are requirements for multi-level social and societal *learning processes*?

How to *govern the transition* to sustainable water management and to which extent can transformative change be governed?

DEVELOPING A CONCEPTUAL FRAMEWORK

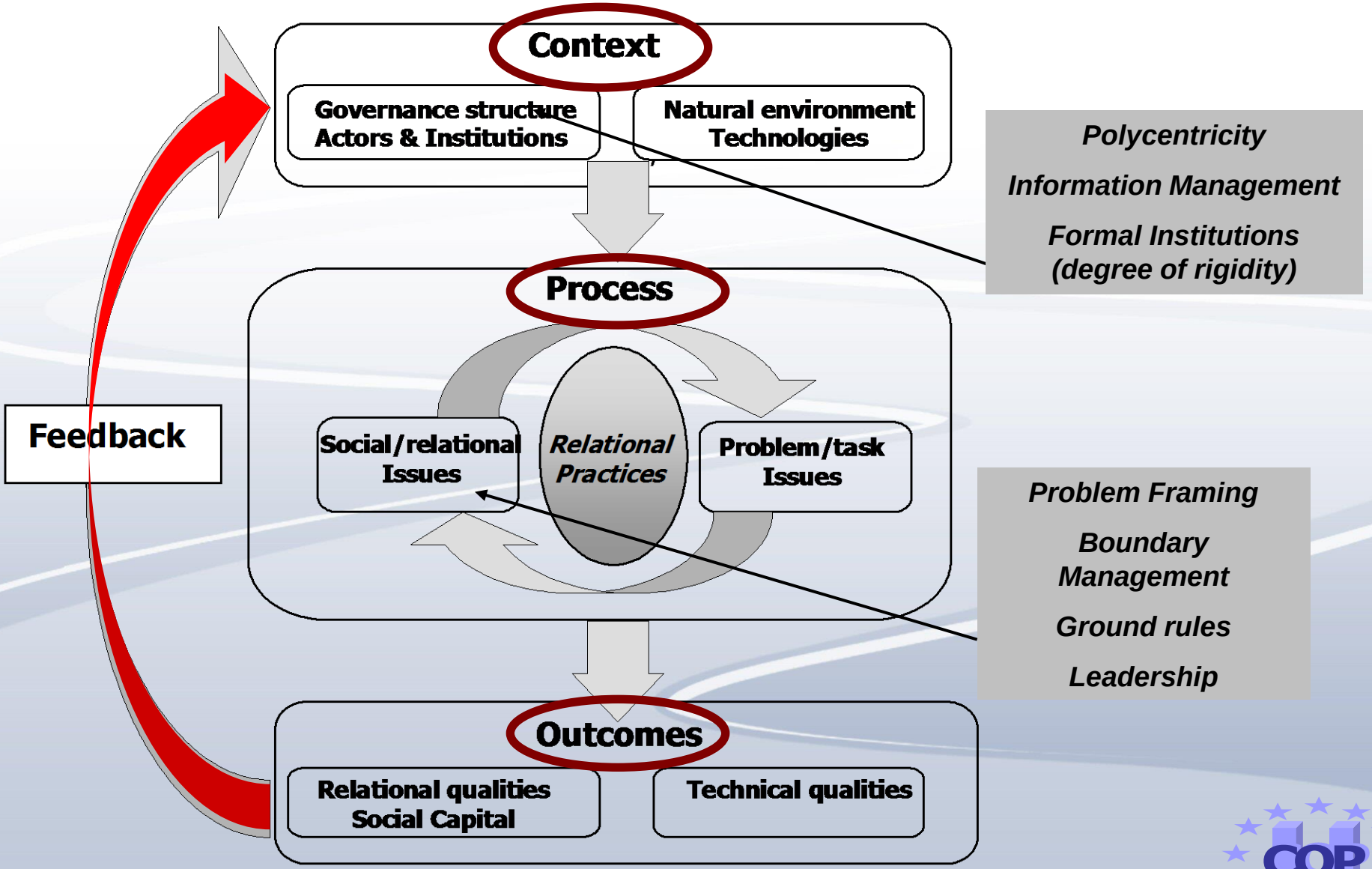
Elements of a Framework



Characteristics of…..

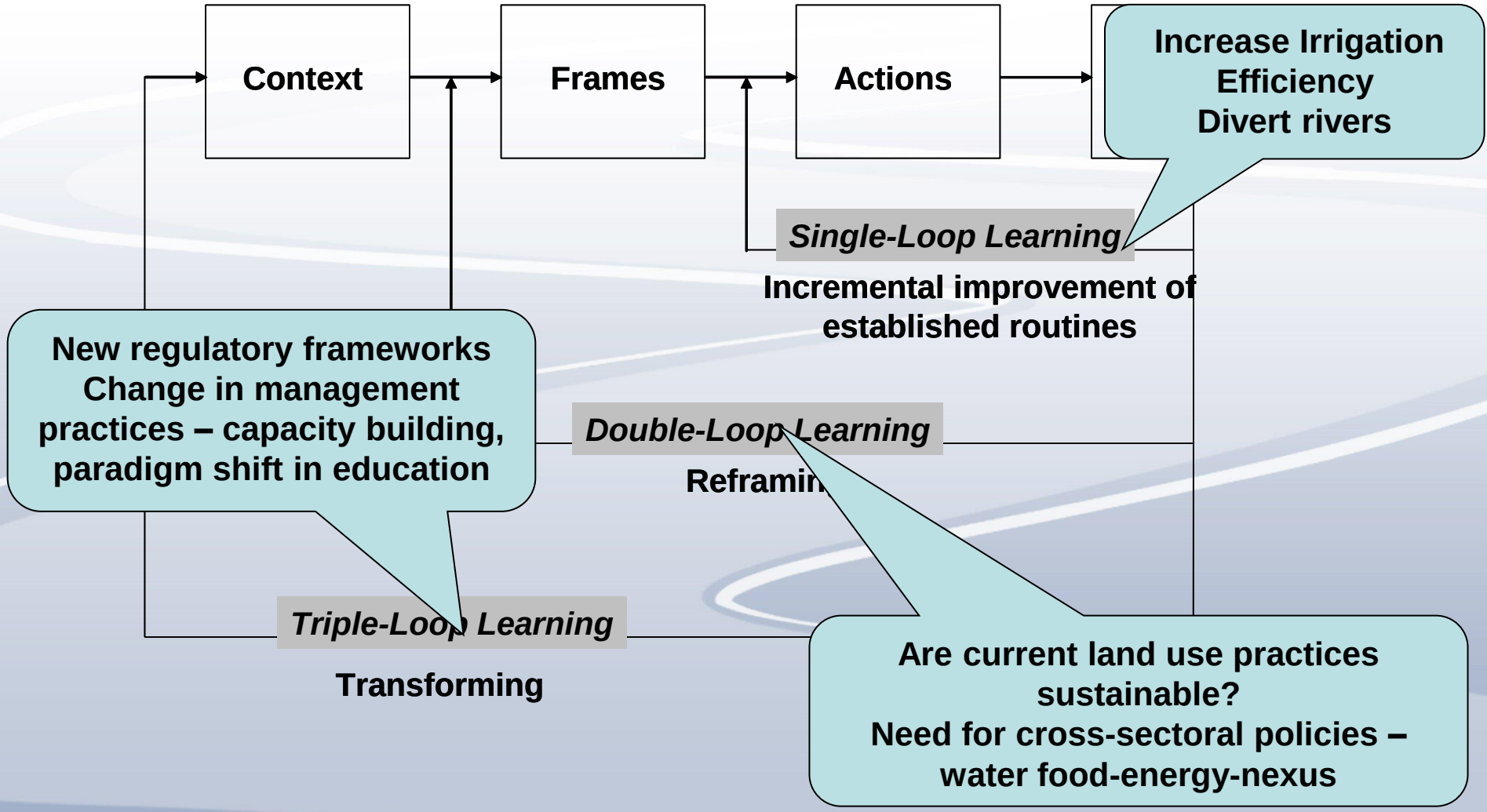
	…..Integrated, Adaptive Regimes
Governance style	Polycentric, broad stakeholder participation
Sectoral Integration	Cross-sectoral analysis identifies emergent problems and integrates policy implementation
Scale of Analysis and Operation	Transboundary issues addressed by multiple scales of analysis and management
Information Management	Comprehensive understanding achieved by open, shared information sources that fill gaps and facilitate integration
Infrastructure	Appropriate scale, diverse sources of design – decentralized - centralized
Finances and Risk	Financial resources diversified using a broad set of private and public financial instruments

A Relational Concept for Social Learning



Pahl-Wostl et al, 2007

An evolutionary perspective on societal change



Change along different dimensions

	Single Loop
Institutions **(regulative, normative, cultural-cognitive)**	No calling into question of established institutions, unilateral reinterpretation
Actor Network	Actors remain within their networks – communities of practice Established roles and identities not called into question

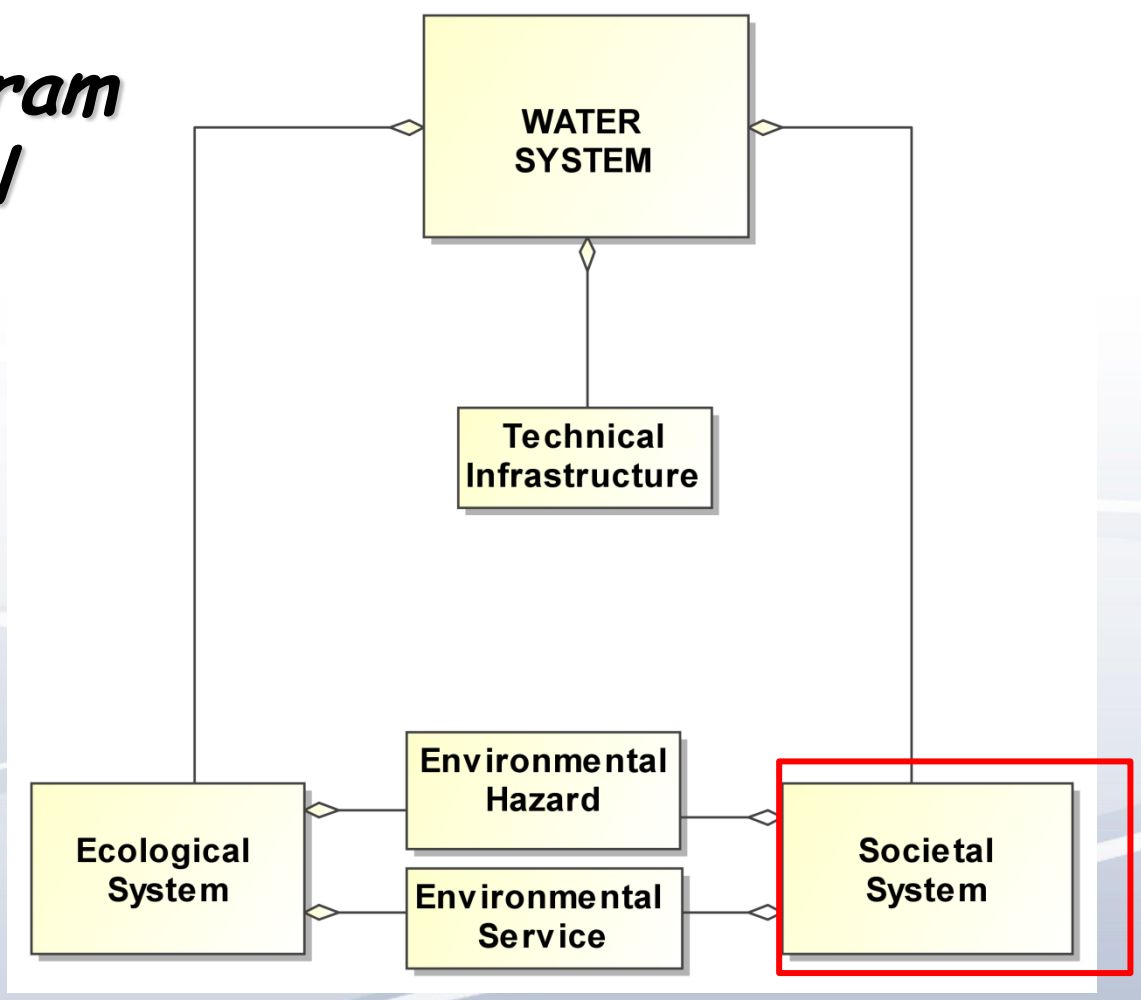
Pahl-Wostl, 2009

The Management and Transition Framework (MTF)

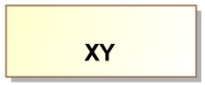
What is the MTF?

- **is a flexible framework to analyse complex water management and multi-level governance regimes and transition processes**
- **is applicable in and supports analysis of different environmental and governance contexts**
- **provides base for comparative analysis (standardized language)**

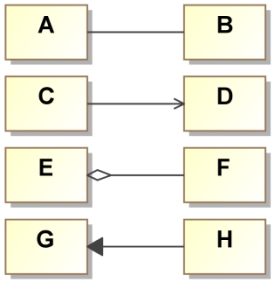
MTF Class Diagram Highest Level



Legend



Class XY



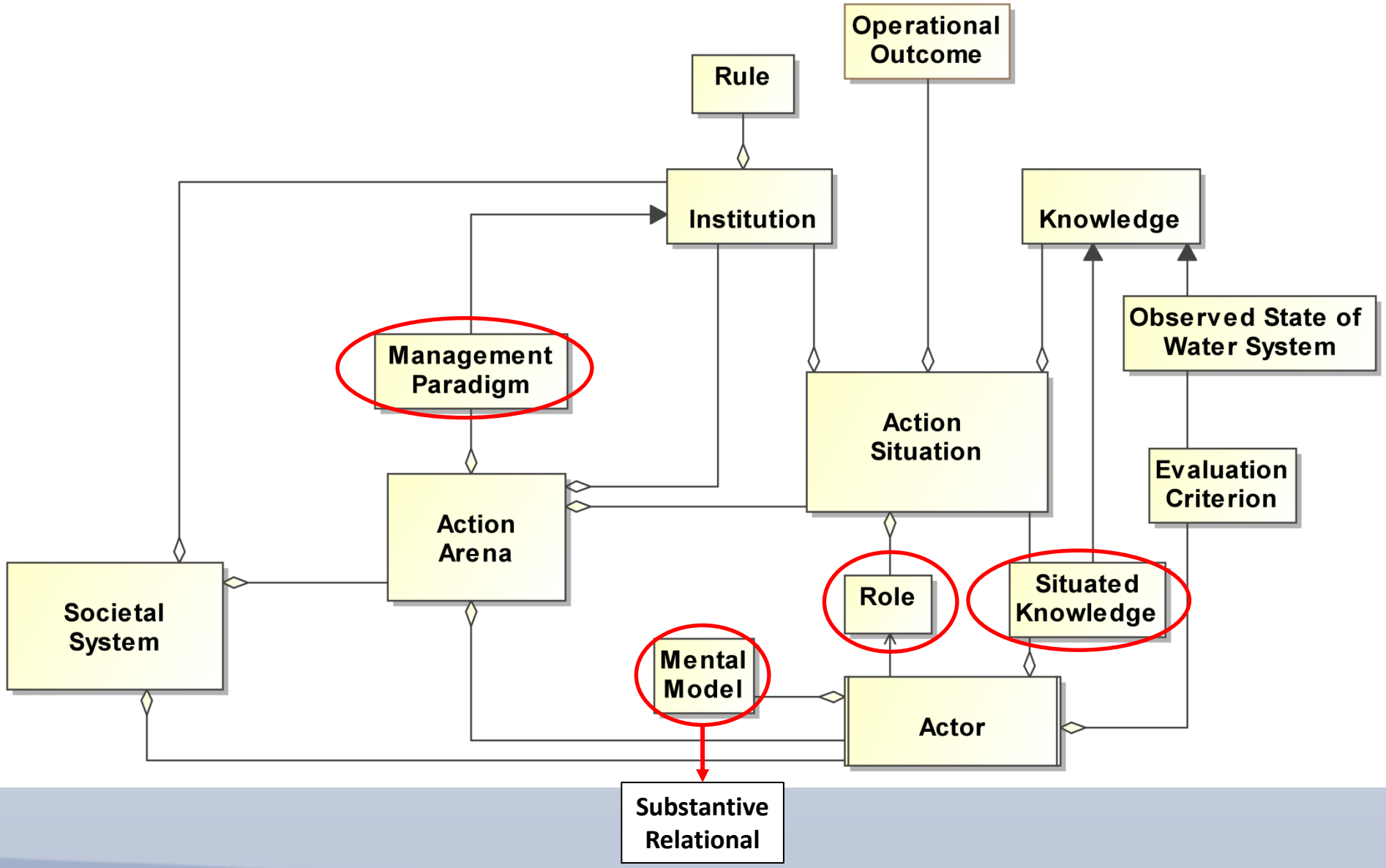
Association: Relationship between objects of class A and objects of class B with unspecified direction of the relationship.

Uni-directional Association: Relationship between objects of class C and objects of class D with specified direction of the relationship.

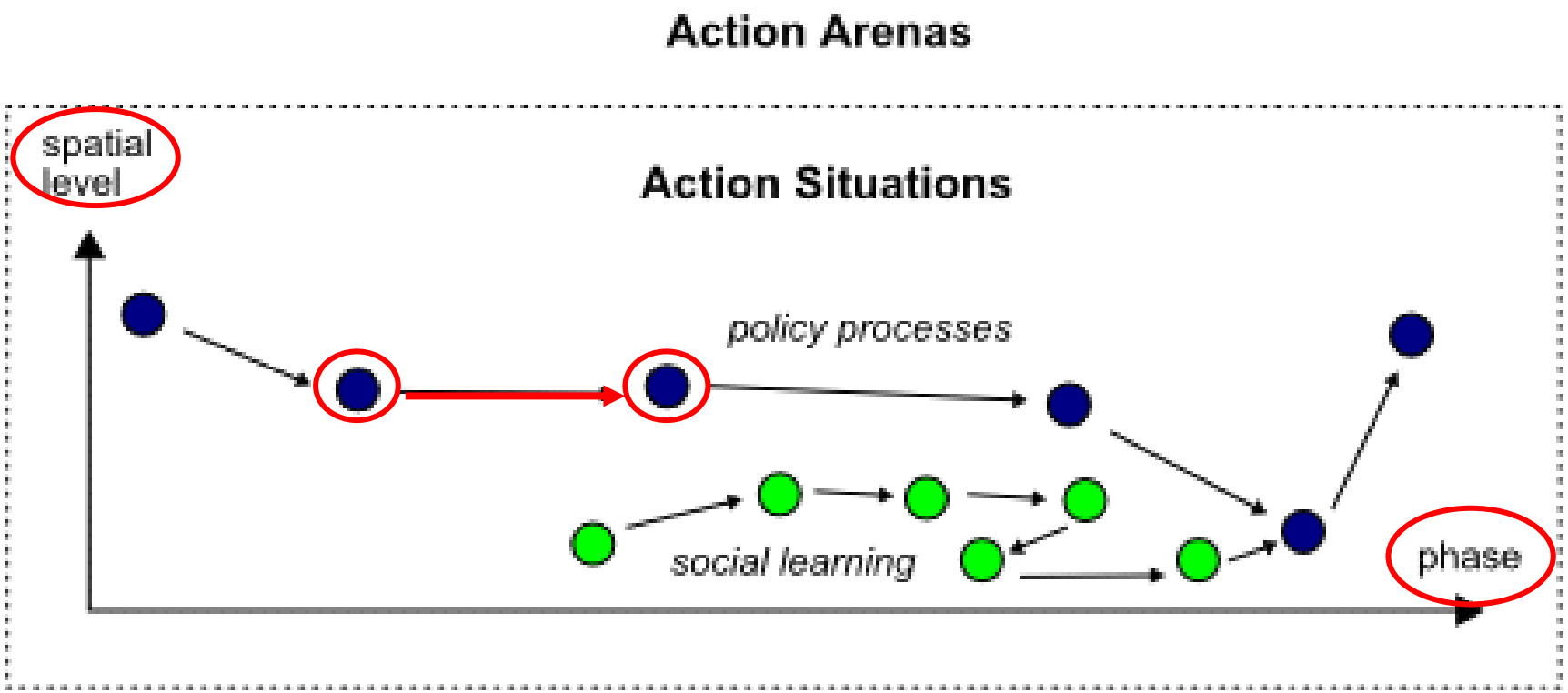
Aggregation: Objects of class E contain objects of class F.

Generalization: Class H is a specialized form of class G.

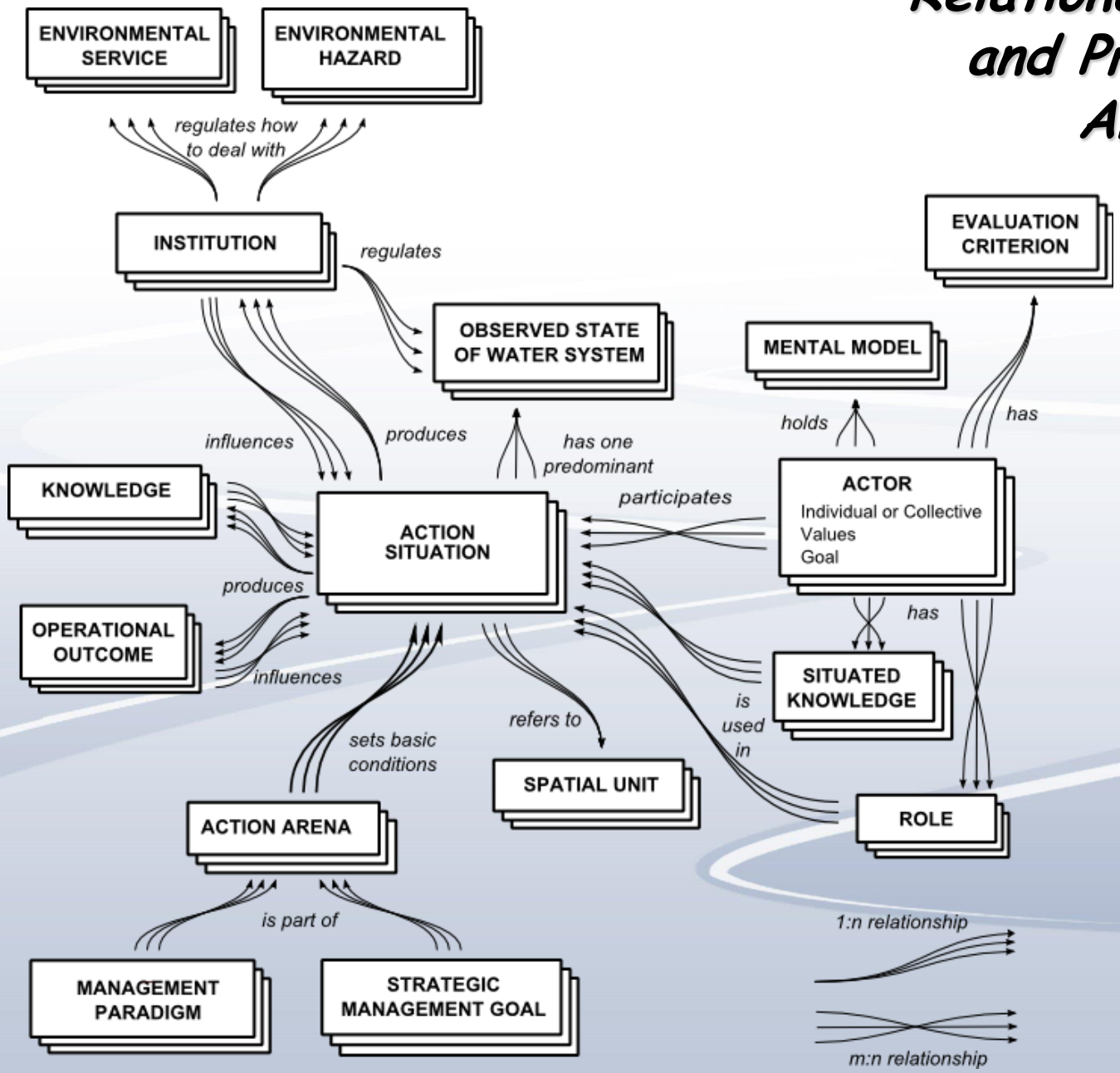
MTF Class Diagram – Governance and Management System



MTF Process Representation



Relational Data Bases and Protocols for Analyses



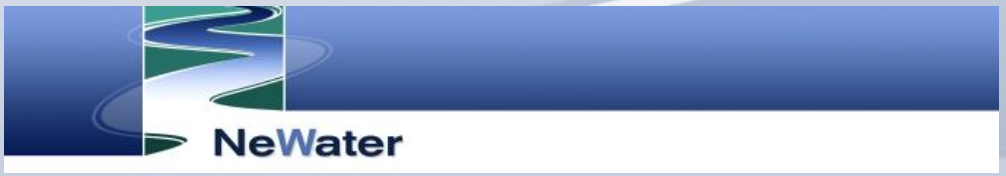
Guidance Books

Develop knowledge base and test assumptions on requirements for and transformation towards adaptive and sustainable water governance by systematic comparative analyses

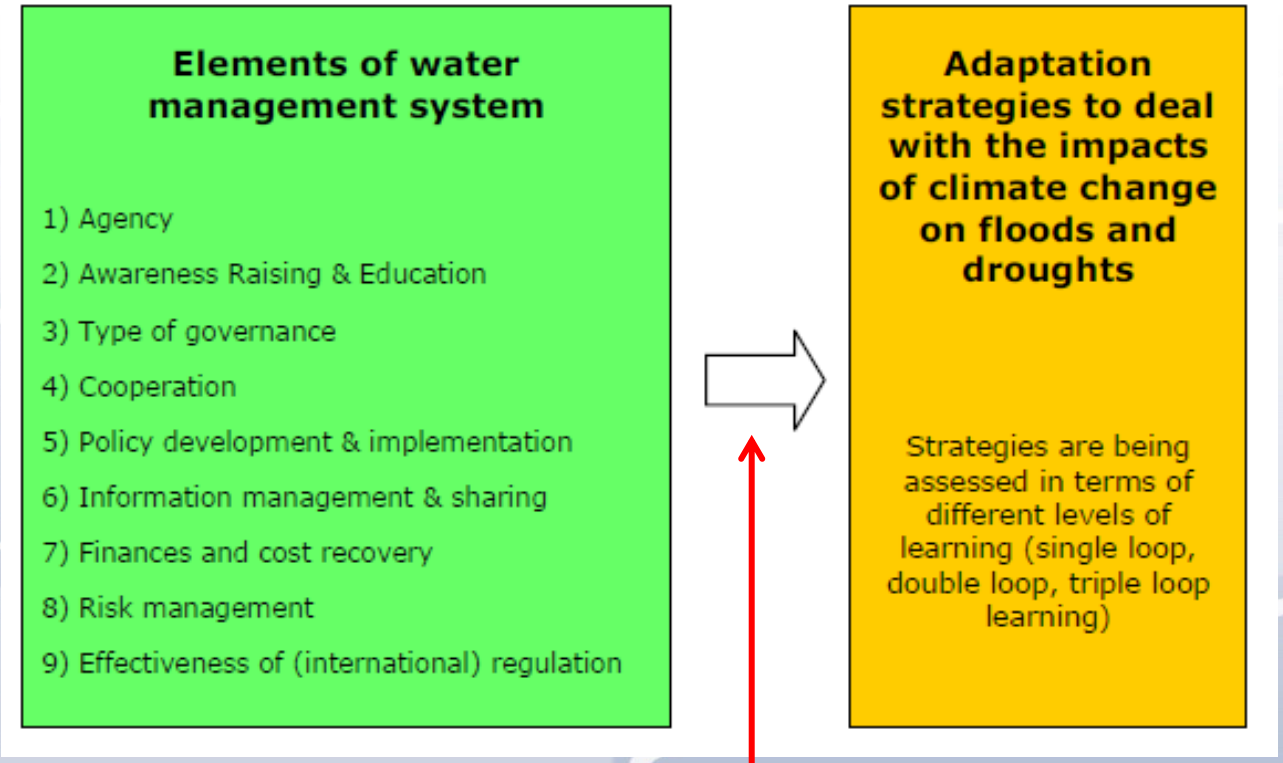
Adaptive Water Management and Policy Learning in a Changing Climate: a Formal Comparative Analysis of Eight Water Management Regimes in Europe, Africa and Asia

Huntjens, Pahl-Wostl et al, 2011

Environmental Policy and Governance



Analytical Framework Comparative Analyses



Major Results

- **Integrated cooperation structures and advanced information management are key factors leading to higher levels of policy learning**
- **Higher levels of learning are reflected in more advanced adaptation strategies for dealing with floods and droughts**
- **Balance between bottom-up and top-down processes needed**

How Multilevel Societal Learning Processes Facilitate Transformative Change: A Comparative Case Study Analysis on Flood Management

Pahl-Wostl,C., Becker,G., Sendzimir,J., and Knieper,C.,
Ecology and Society, 2013

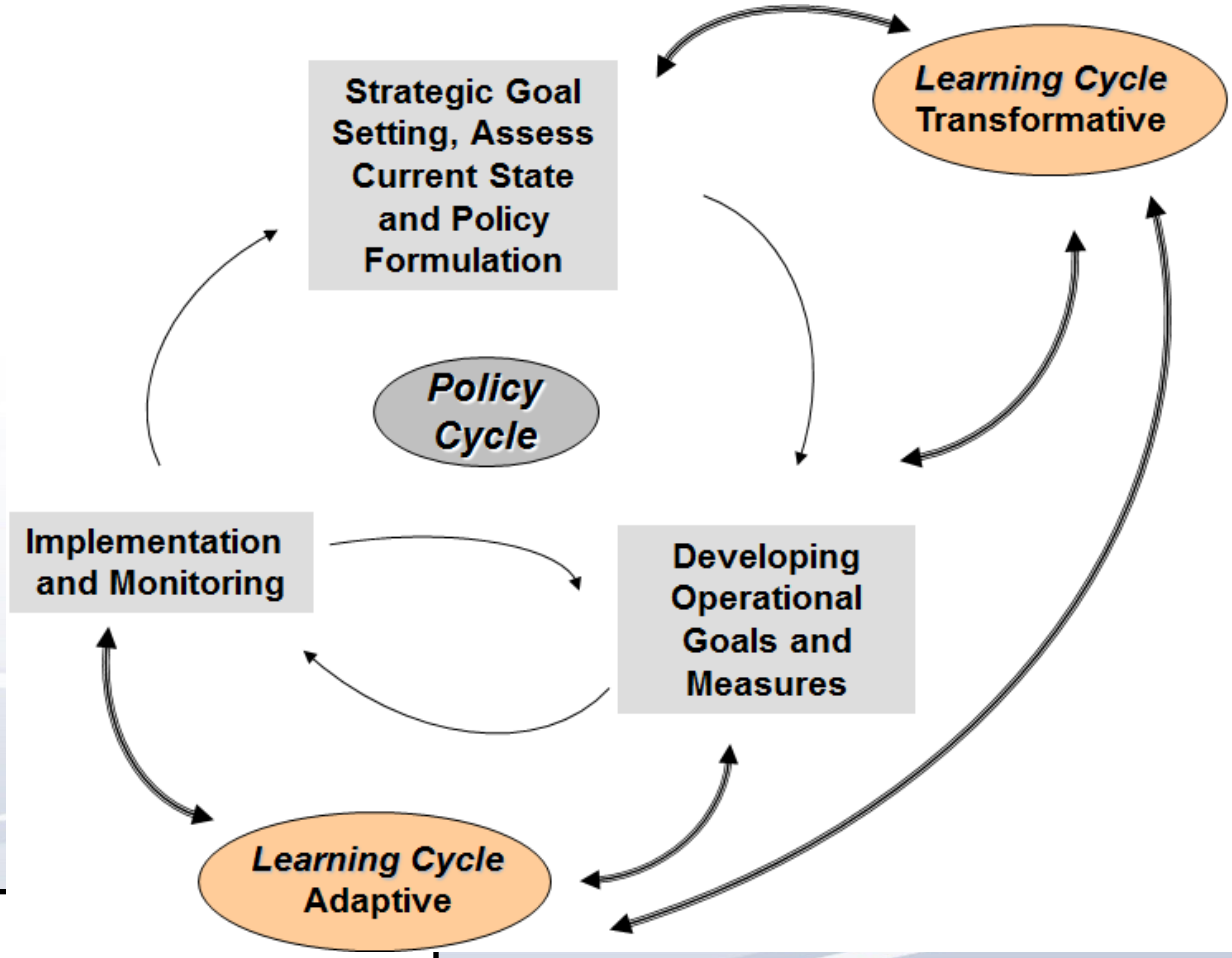
Research Goals and Method

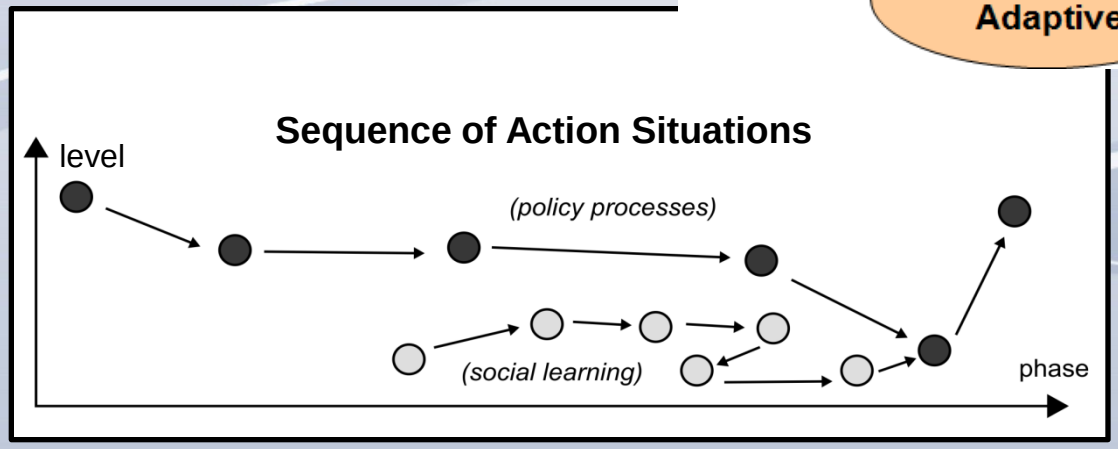
Analyse the importance of higher levels of learning for the transition from traditional to integrated flood management

Test the appropriateness of the triple-loop learning concept to analyse and explain change

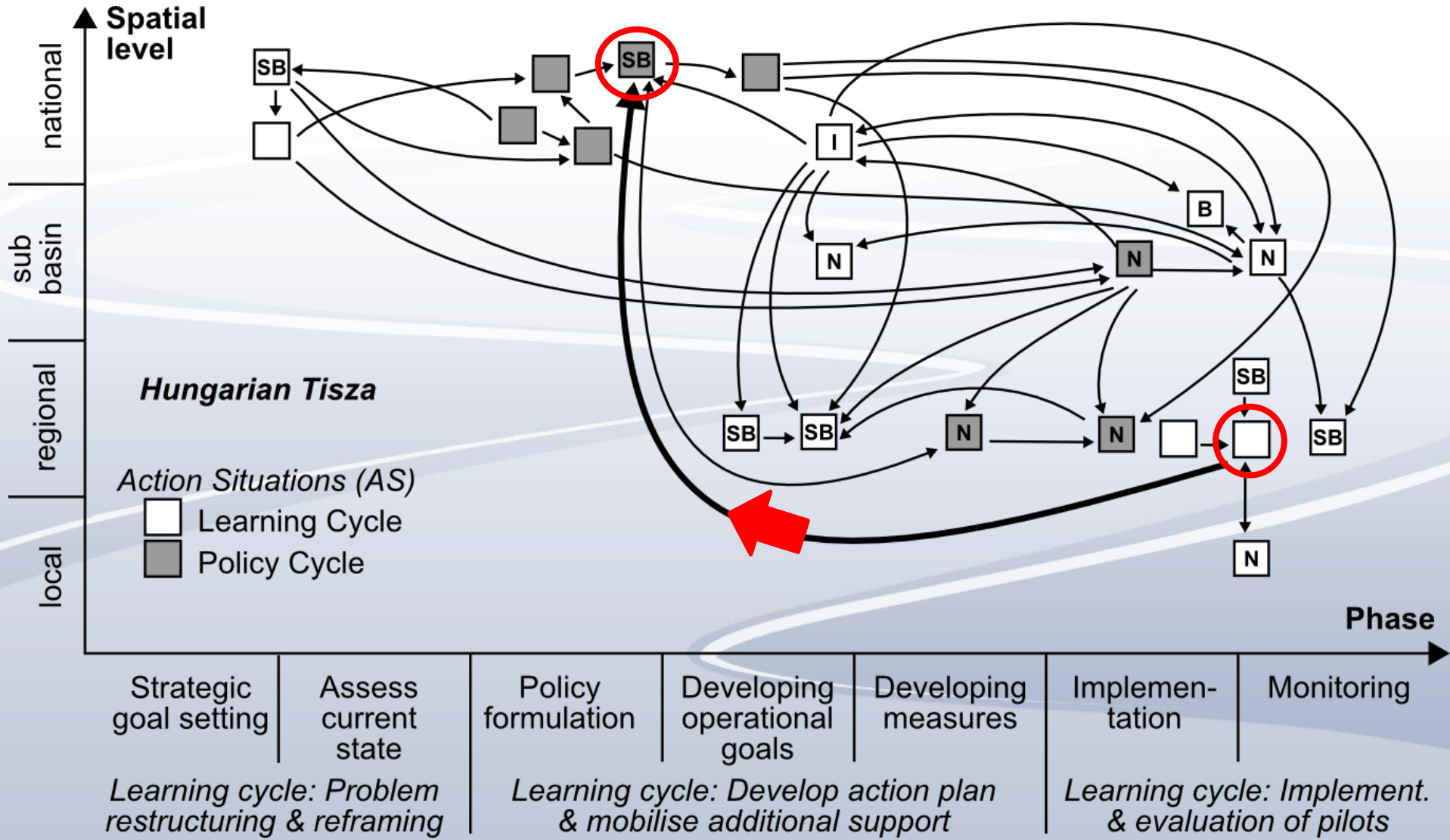
Use MTF for structured qualitative comparative analysis of three national basins

Multi-level process representation





Multi-level representation Hungarian Tisza



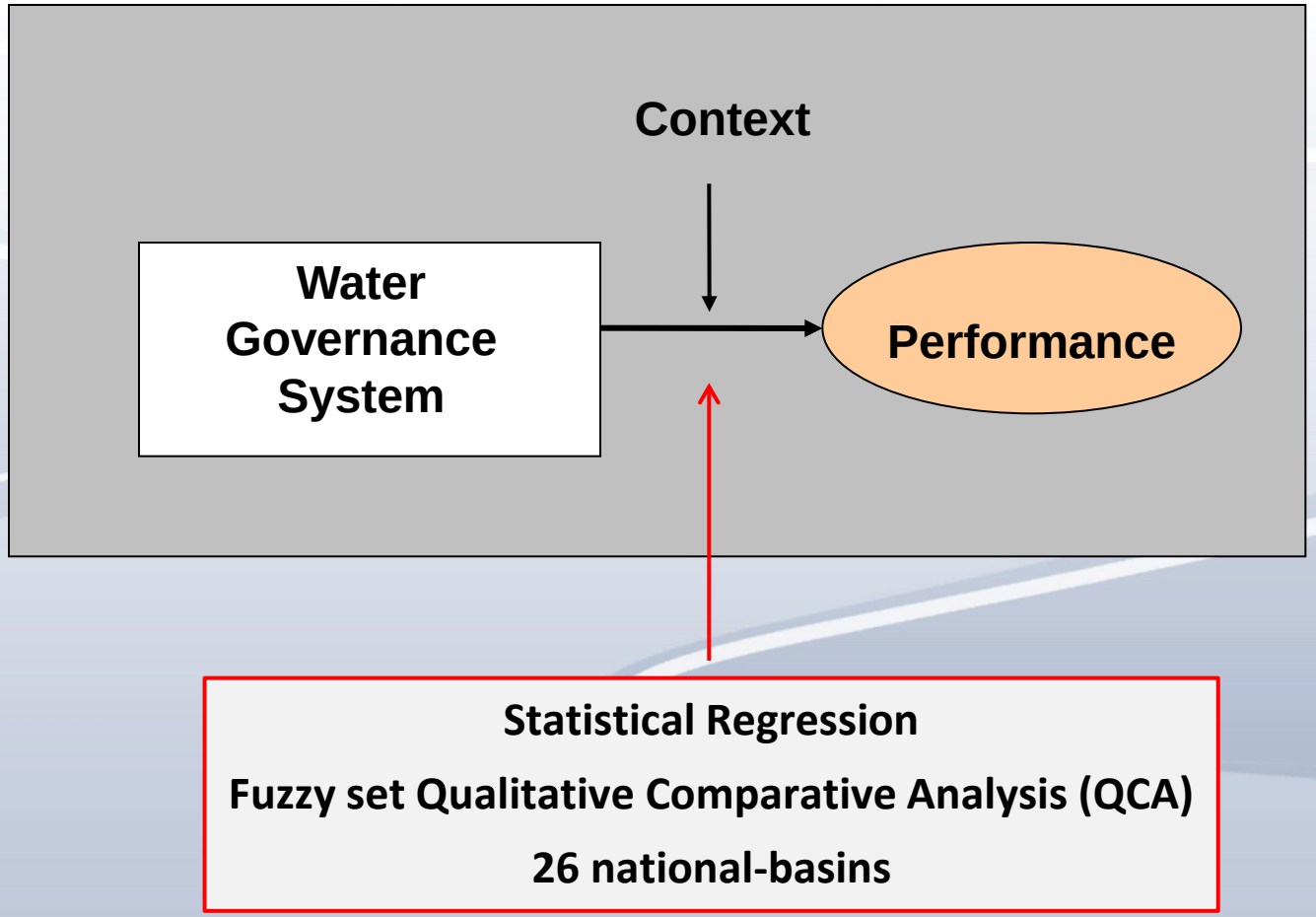
What drives change?

- **Moving from discourse to structural transformation depends on *effectiveness of links between informal settings and formal policy processes*.**
  - **Informal spaces and diverse actor networks important to support integration of knowledge and experimentation with innovative approaches**
  - **Connections between learning and policy processes (e.g. hinge on individual actors) are fragile if innovative approaches are not codified in formal institutions and widely shared practices**
- **Disasters as windows of opportunity for policy change**
- **Change takes place on time scales of years - decades**

Towards Adaptive Governance in River Basins: From panaceas to context sensitive analyses and recommendations

Twin2Go

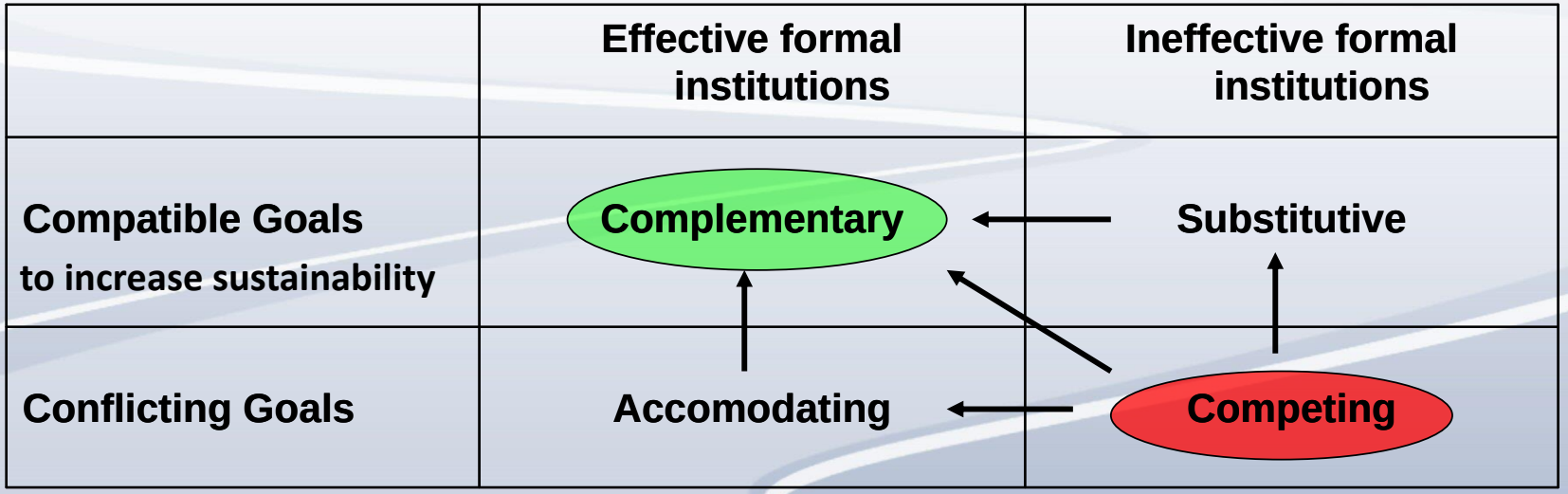
Framework of analysis for diagnostic approach



Major Insights

- **Advanced climate change adaptation strongly related to polycentric governance and innovative ways for dealing with uncertainty**
- **Efforts towards decentralization seem often to lead to fragmentation rather than polycentric regimes**
- **Transfer of general guiding principles and good practices for implementation that still can be tailored to context**
- **Central role of institutional development (CPI) - more important than economic development (GDP) for both high and low performance**

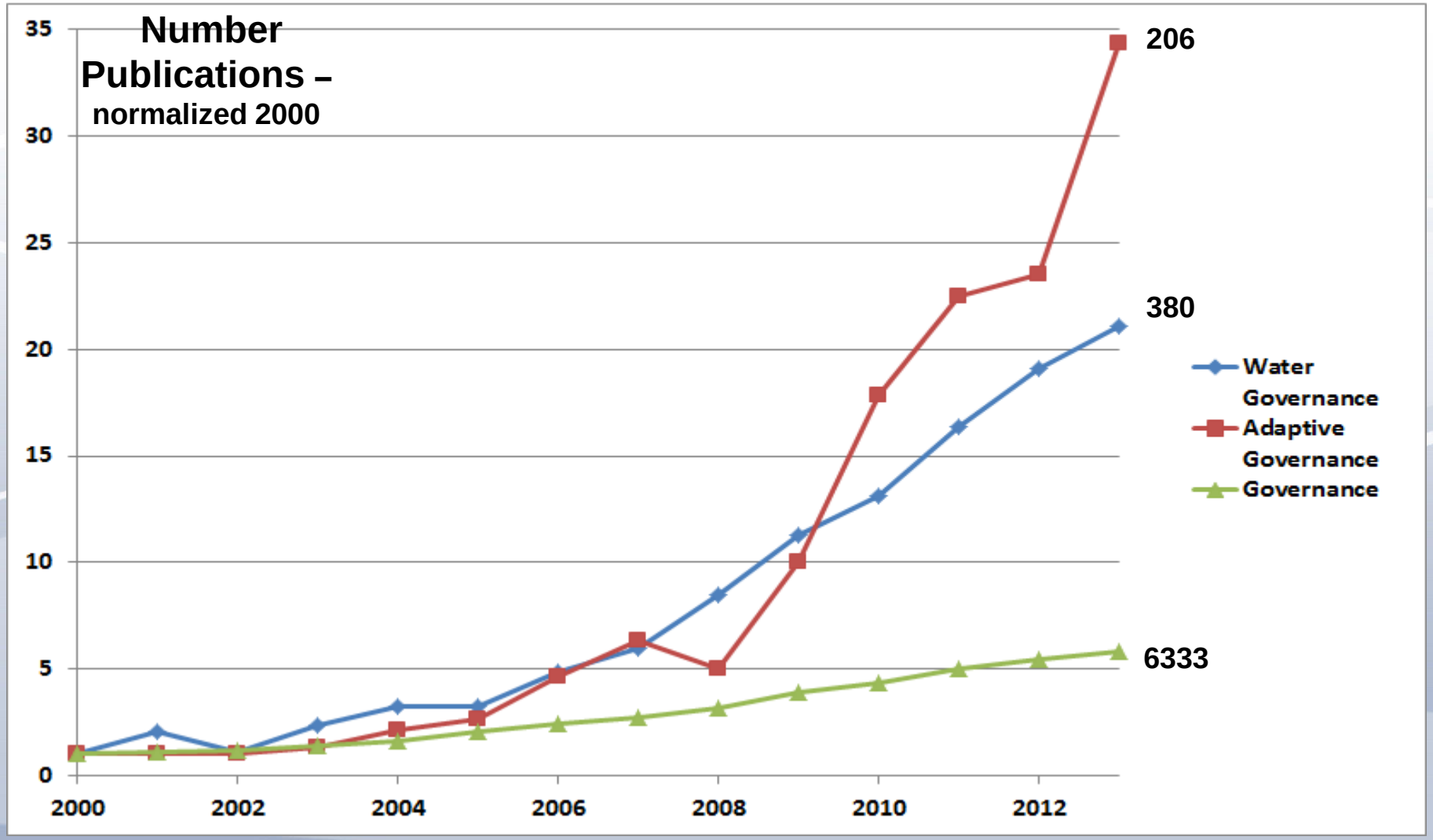
Trajectories of Change – Building Transformative Capacity



Modified from Helmke and Levitsky, 2003

Some Reflections on Frameworks and Evolving Communities

Adaptive and Water Governance - Emerging Research Fields



Framework and Theory Development…

- **… is an evolutionary process**
- **… integration of conceptual frameworks and/or use of complementary frameworks required to capture complexity of the dynamics of governance systems**
- **… joint development and application of deep frameworks demanding due to costs in using the framework**
- **… agreement on light standards essential to compare (the results of application of) different frameworks**

THANK YOU FOR YOUR

ATTENTION !

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