



# **Water in Africa: Hydro-Pessimism or Hydro-Optimism?**

## **Água em África: Hidro-pessimismo ou Hidro-optimismo**

Centro de Estudos Africanos da Universidade do Porto  
Porto, Portugal, 2-3 October 2008

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# *Resilience and Governance*

Analysing water governance in coupled  
social-ecological systems

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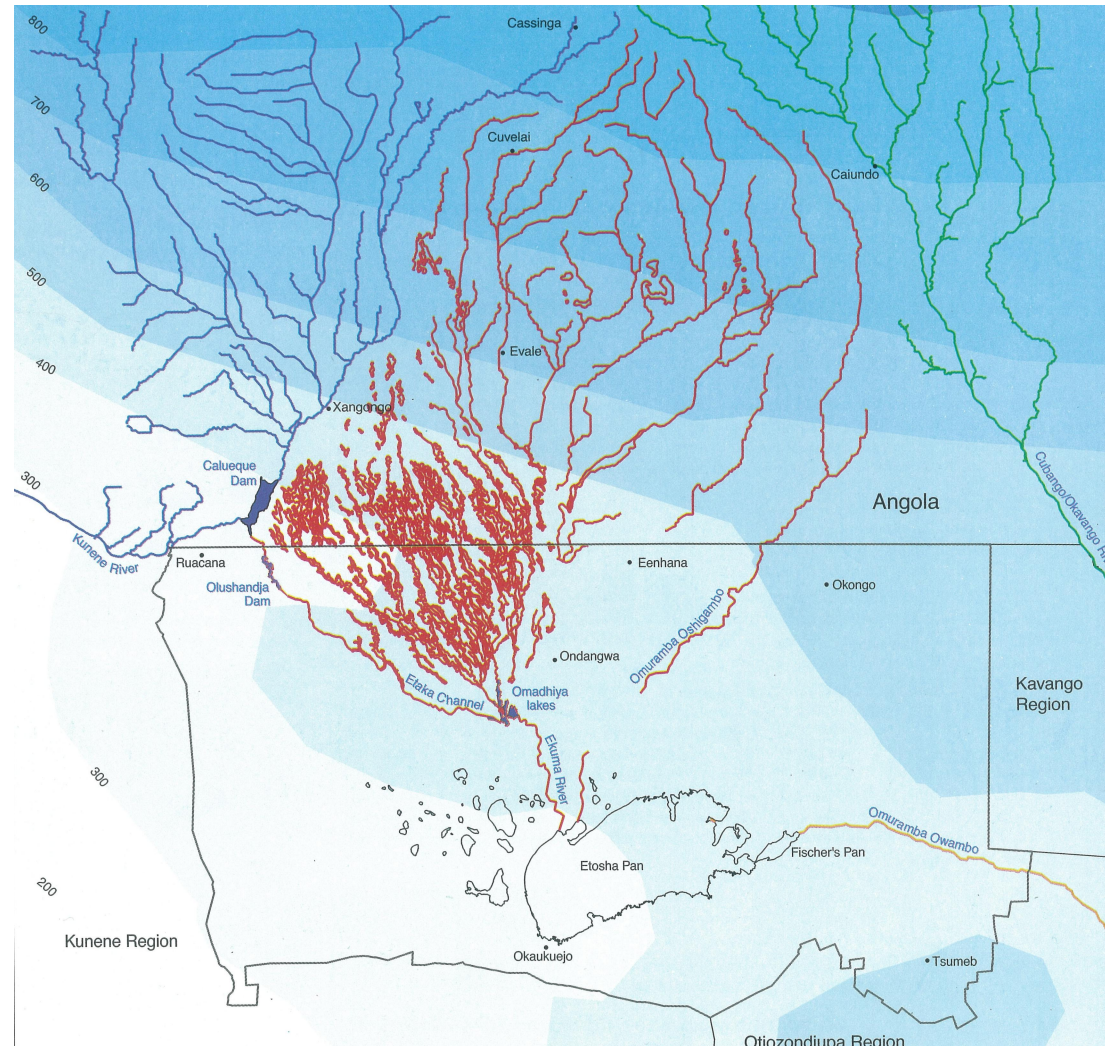
CuveWaters. Integrated Water Resources Management in  
North-Central Namibia ([www.cuvewaters.net](http://www.cuvewaters.net))

Water in Africa. Hydro-Pessimism or Hydro-Optimism?

Porto, 02.-03.10.2008

# The Social-Ecological System of the Cuvelai-Etosha Basin

- traditionally a strong coupling of diverse livelihood strategies and variable natural conditions
- people have a broad knowledge about adaptation (activities, norms, customs)
- functioning of livelihood depends on natural system (social-ecological system)



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# Social-Ecological System in Transition

## Political changes

- Decentralisation, community management, participation
- Parallelism between TA and newly established institutions

## Economic transition

- Diversification of livelihood strategies
- Increased mobility

## Environmental change

- Climate change

## Other factors

- Population growth
- Transboundary situation

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# Resilience in Social-Ecological Systems I

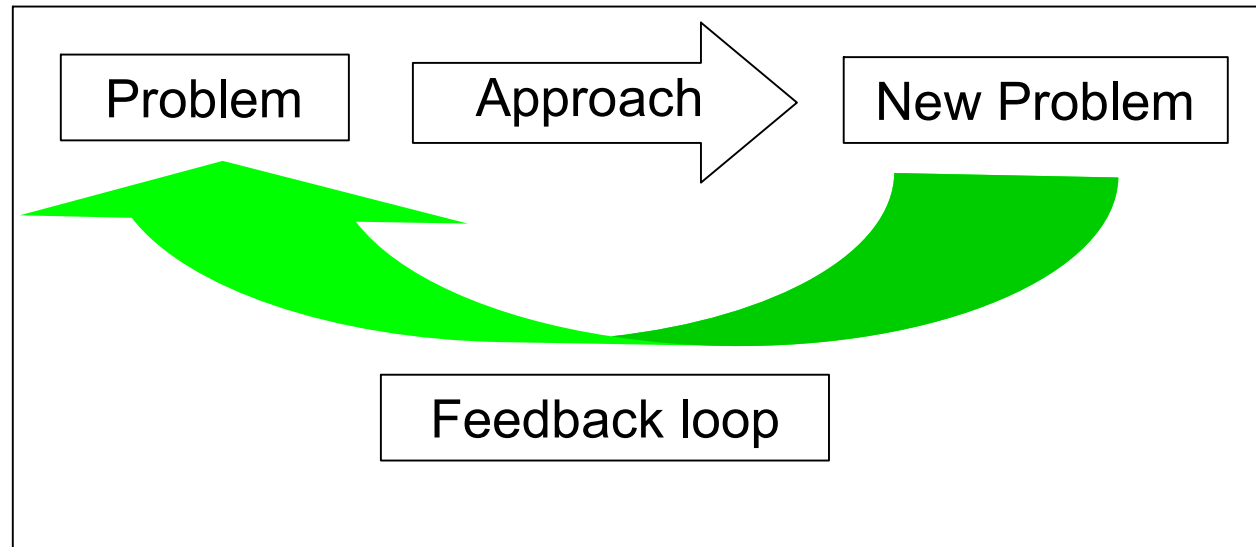
- **ability of a system to cope with change and the capacity to absorb shocks while maintaining key functions of the system**
- originated in ecological science, slowly developing into a heuristic for the integrated analysis of coupled SES
- focus on ecosystem services and their maintenance
- resilience describes an attribute (or capacity) of a SES, not a state
- adaptation to change, not maintaining a certain situation
- procedural perspective on SES

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# Resilience in Social-Ecological Systems II

- resilience as maintaining options, vulnerability as loss of alternatives
- resilience in SES takes into account human abilities to anticipate and plan for future events
- stakeholders in resilient systems develop adaptive capacity: to manage their system to enhance resilience
- acceptance of uncertainty in natural resources management (vs. scientific management)
- capacity to find new answers for unknown questions
- knowledge about the SES instead of dogmatic receipts

# Learning Governance



- Social learning: a dominant approach is substituted by another, changes in relevant societal norms or practices
- group process, embedded in governance structures (political process)
- group develops a common perception of a problem (mental model)

➡ Policies as hypotheses

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# Resilience and Governance I

governance structures that monitor, detect and respond to signals of change

- Participation

- management of uncertainty needs more than expert knowledge, inclusion of tacit (non-scientific) knowledge
- raising awareness for changes in the external environment, fosters acceptance for adaptation
- building trust for governance structures, legitimacy of political processes
- leadership as important aspect
- is influenced by cultural factors (individualism, masculinity, security orientation...)

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# Resilience and Governance II

- Polycentric and multilayered structures
  - opposite to top-down structures
  - allow for the inclusion of locally-developed solutions
  - allow for critical reflection and permanent reframing of reality
  - reflect the multilayered character of SES
  - recognition of interdependencies within the system (knowledge management)
  - practical implementation through decentralisation

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# Resilience and Governance III

Governance structures that foster resilience need to:

- acknowledge the management of natural resources as a political task (not a scientific one)
- provide arenas for discourse and defining common perceptions of problem situations
- take on board different approaches of resources management
- built up knowledge about ecological processes (informed decisions)
- include different types of knowledge into the political process



Problems:

- Ideal type of governance
- Research on governance and resilience is still young

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# Collective Action and Individual Interests

- Political processes are determined by:
  - structural ties (values, norms, traditions)
  - individual actors who pursue their interests
- in periods of transition decision making tends to be more conflictive
- power imbalances might explain why (not) actors engage in collective action
- power of actors can be analysed with their endowment with **power resources**
  - risk behaviour and exit costs
  - time preference
  - organizability
  - ideology
  - information and knowledge
  - positional power

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# Research Questions

How will decentralisation policy influence communication structures and participation? (formally strengthened vs. reduction of influence of TAs)

Will the governance structures allow for the integrated management of water and land?

Will people come to perceptual convergence on water problems when economic transition makes them less dependend on water?

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Thank you for your attention!