# Systemic Governance Practices

**Project Brief for Work Package 3 (WP3)**

## Overview

It is possible to use the example of watersheds, or river catchments and coastal estuaries, to help understand how social and biophysical phenomena mutually influence each other over time (see Figure 1). Water governance is becoming an increasingly important issue at the same time as several others that are linked to it, including climate change adaptation, energy and food security and biodiversity conservation.

Effective governance needs to link up these diverse areas of policy in order to enhance and maintain the quality of biophysical and social processes in which water plays a central role. New challenges demand new ways of thinking and acting, and we can think of water or river catchments as a type of theatre (see Figure 1) in which new and different types of performance have to be developed to meet present and future needs.[1]

The discourse on environmental governance is shifting away from viewing 'ecological systems' and 'social systems' as distinct, either/or concepts. At the same time, there are different and contested ways of interpreting new terms such as social-ecological and social-biophysical systems. The re-conceptualization of water catchments as coupled social-ecological or social-biophysical systems does show promise, but also places new demands on efforts to understand the relationship between research, policy and practice. In particular, it questions reliance on historical, linear models of knowledge, or technology, transfer and stationarity rather than models associated with learning and adaptation.

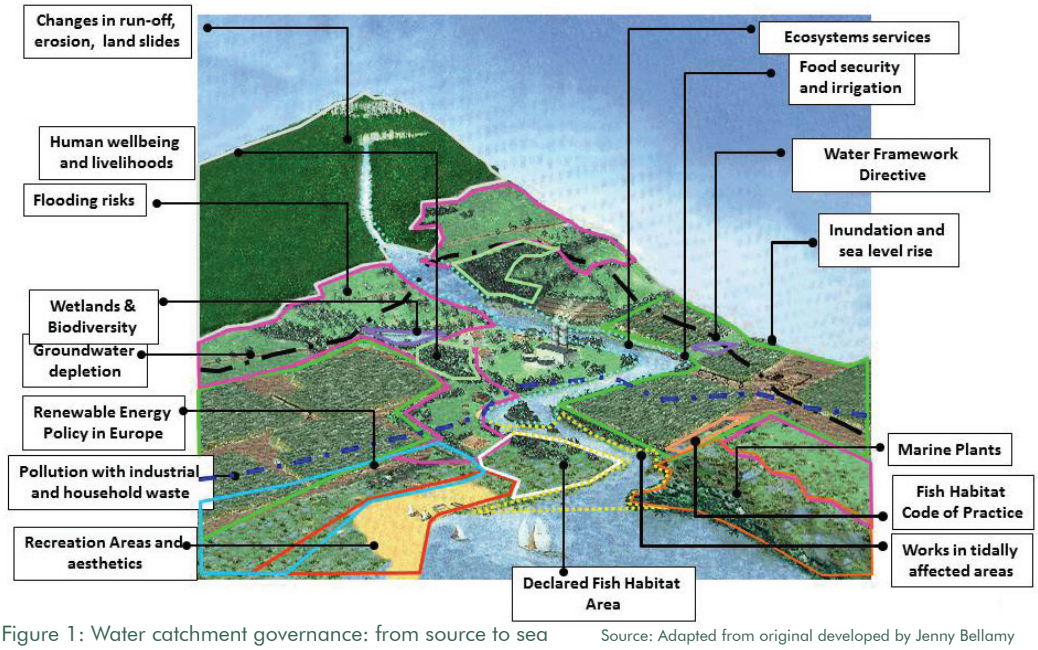


Figure 1: Water catchment governance: from source to sea

Source: Adapted from original developed by Jenny Bellamy

This work package proposes a new framing for managing water, one that recognizes that human social systems and biophysical systems are coupled in a mutually influencing co-evolutionary dynamic (see Figure 2). The two systems co-evolve over time and mutually influence one another – a process known as 'structural coupling'. The bubble can be understood as what humans have invented to mediate (or insulate) our relationship with the earth – the many institutions, rules, laws, regulations and technologies that mediate or influence our human co-evolutionary dynamic with the biophysical world.

The framing choice adopted in this work package reverses the dominant view that catchments are only hydrological or ecological systems. Our framing provides a focus on historical and contemporary human practices that affect the quality and trajectory of water governance and recognizes that catchments are multi-stakeholder, social situations (Ison and Wallis 2011). Of particular interest are situated 'governance performances' in the CADWAGO case studies. A governance performance can be understood as an action that satisfies a negotiated and agreed purpose, and which emerges from joint learning about what is at issue. Collins and Ison (2009), based on SLIM empirical research[2], elucidate key elements of praxis that, when carried out well, can lead to good governance performances (Figure 3). In particular, this work package focuses on better understanding how history, facilitation, stake-holding, and reflexivity characterize water governance praxis and how these practical actions might be improved.

## Aim

Work package 3 aims to critically assess how history, facilitation, stake-holding and reflexivity contribute to water governance under conditions of climate change.

## Looking through the lens of systems theory

The stance that this work package adopts is based on systems-theory, and recognizes that systems are a social construct. That is, systems involve judgments by concerned stakeholders about what is in or outside a given system, and about how the elements in a system interrelate. Viewed in this way, a system is a means of framing an inquiry into complex or 'wicked' multi-stakeholder situations that leads to new ways of knowing about

1 In this brief the term social-biophysical system will be used unlike other work packages where the term social-ecological system is used. All work packages are concerned with the same sets of phenomena but a research ambition is to clarify the utility of different conceptualisations of these phenomena.

2 SLIM (Social Learning for the Integrated Management and Sustainable use of Water at Catchment Scale) was a EU-funded 5th Framework Research Project (2000-2004) in which several CADWAGO researchers participated.

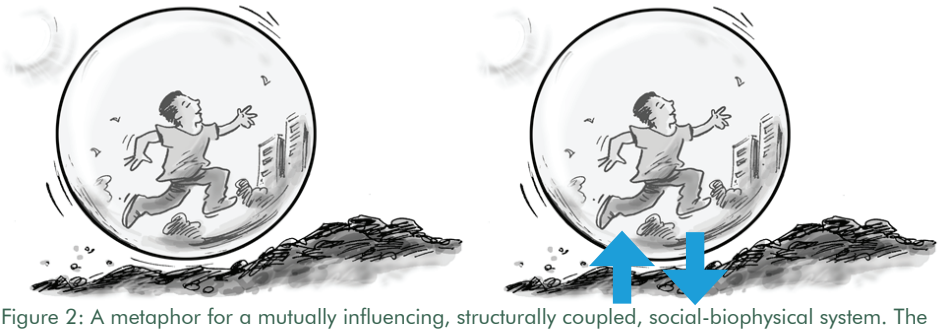

Figure 2: A metaphor for a mutually influencing, structurally coupled, social-biophysical system. The bubble constitutes the human social system; in the image on the right, the arrows represent processes and institutions invented by humans that mediate the relationship, over time, of a social and biophysical system. (Source: Ison 2010)

and changing a situation. This process of inquiry, when done with others, can lead to concerted action or social learning (Blackmore et al. 2007). Drawing on this form of systems theory in collaborative processes contributes to epistemic resilience, as outlined for WP1.

Work package three builds on research into systemic governance by SLIM (see Blackmore et al. 2007), as well as from the UK and Australia and from other CADWAGO partners. Our framing of governance draws on the lineage of cyber-systemics. The organizing metaphor in this framing is a helmsperson, steering or charting a viable course in response to feedback (from currents, wind etc.) and in relation to a purpose that is negotiated and renegotiated within an unfolding context; that is, in response to uncertainty. In the practical context of water governance a helmsperson might be a group of people, either in an institutionalized or self-organizing form. Equally it could be an established organization like a government department. We hold no normative view of who the helmsperson might be – what is critical is the relationship between those who fulfil this role, how purpose is generated and understood, and how governance is enacted in relation to a changing and dynamic context. Thus, governance that is 'systemic' and 'adaptive' incorporates learning and change in response to unfolding circumstances, that is, it understands and manages feedback. Built into CADWAGO is a distinction between generating different types of data that contribute to epistemic resilience, as described for WP1 (Powell et al 2011; Ison et al 2011), and facilitating and reflecting upon policy learning.

## Our approach

Work package three is organized around four research questions:

1. How does history contribute to current water governance?
2. What constitutes facilitation in the context of the case studies?
3. What is the extent and nature of stake-holding in a given situation?
4. How is governance practice organized and understood (= reflexivity)?

The diagrams in Figure 4 elaborate on each of these questions and provide researchers with ways to engage with the questions in each case study. However the methodological approach we suggest does not offer a blueprint – each question will be answered in ways that are relevant to context and thus will require different research methods and techniques.

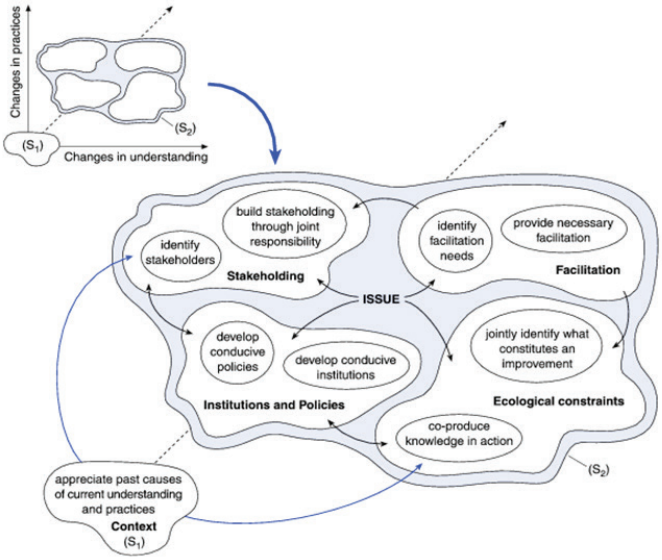


Figure 3: Key activities involved in bringing about change in managing water through social learning. A heuristic can be used to design or inquire into effective water governance. (Source: Collins and Ison 2009)

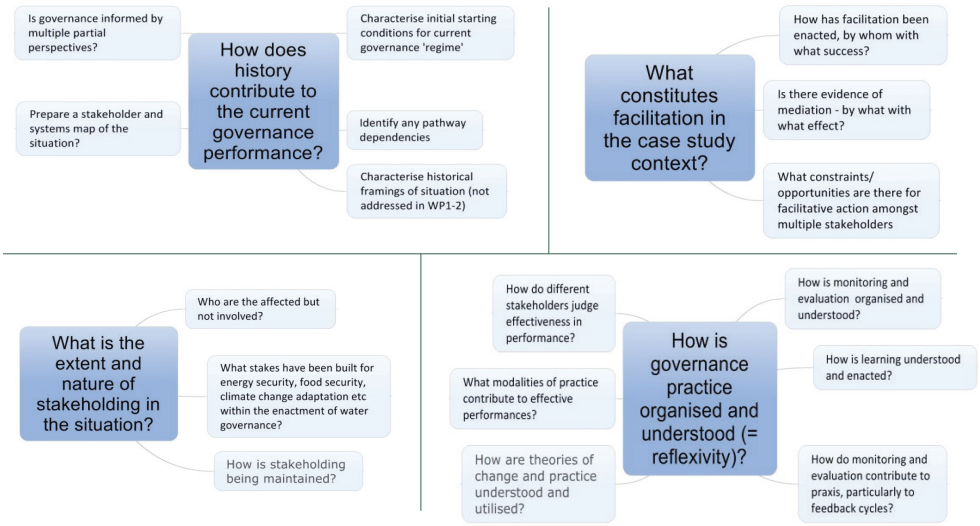


Figure 4: The four research questions in work package 3, with possible directions for the research

## CADWAGO Statement

*CADWAGO* stands for "climate change adaptation and water governance: reconciling food security, renewable energy and the provision of multiple ecosystem services". The project aims to improve water governance by developing a more robust knowledge base and enhancing capacity to adapt to climate change. CADWAGO is led by SEI and brings together 10 partners from Europe, Australasia and North America with extensive experience in climate change adaptation and water governance issues, and will extend the global knowledge base by sharing methods and findings. CADWAGO builds on lessons from ongoing case research to create a forum and dialogue between researchers and stakeholders at different scales. Lessons from the cases will be synthesized and used to adapt European decision-making that has a global impact.

Work package three will take the following steps to achieve its aim:

- Partners for each CADWAGO case will be asked to create a reflective narrative using the guiding questions shown in Figure 4 and methods judged appropriate for this purpose.
- We will qualitatively analyze each narrative, looking for both commonalities and key differences. In the first pass of analysis, we will seek to build accounts of water governance performances in the light of systems theory and the framing of water catchments as structurally coupled systems.
- We will then analyze all CADWAGO cases.

## Outputs and outcomes

- A summary report for each case that addresses the questions in work package three
- A report on the findings across all CADWAGO cases
- New heuristics to explore and plan for water governance performances
- Increased understanding of the roles that history, facilitation, stake-holding and grounded praxis do or don't play in building good performances, and
- Insight into the strengths and/or limitations of our theoretical and methodological approach.

## Links to other work packages and CADWAGO questions

- WP3 seeks to explore through the CADWAGO case studies the extent to which institutions, the concern of WP2, and the mental models and associated framings we have of ecosystems (WP1) are key influences on the quality of water governance performances that are produced over time
- Insights into how to better design and manage learning processes for water governance will emerge from WPs 1-3 and contribute to WP4). These insights will contribute to more effective systemic governance of water catchments.

## References


Blackmore, C.P., Ison, R.L. & Jiggins, J. (2007) Social learning: an alternative policy instrument for managing in the context of Europe's water. Editorial, Special Edition, Environmental Science & Policy 10 (6) 493-498.

Collins, K.B. & Ison, R.L. (2009) Jumping off Arnstein's ladder: social learning as a new policy paradigm for climate change adaptation. Environmental Policy & Governance 19 (6) 358-373.

Ison, R.L. 2010. Systems Practice: How to Act in a Climate Change World. Springer, London.

Ison, R.L. & Wallis, P. (2011) Planning as Performance. The Murray-Darling Basin Plan. In Grafton Q & Connell, D. eds. Basin Futures: Water reform in the Murray-Darling Basin, pp. 399-411. ANU ePress, Canberra.

Ison, R.L., Collins, K.B, Colvin, J.C, Jiggins, J. Roggero, P.P., Seddaiu, G., Steyaert, P., Toderi, M. and Zanolla, C. (2011) Sustainable catchment managing in a climate changing world: new integrative modalities for connecting policy makers, scientists and other stakeholders, Water Resources Management 25 (15) 3977-3992

Powell N., Osbeck M, Sinh B T, and Vu C., 2011, Mangrove Restoration and Rehabilitation for Climate Change Adaptation in Vietnam. World Resources Report., Washington DC.


SEI Stockholm Environment Institute · Griffith University · SLU · The Open University · University of the Sunshine Coast · Brock University Environmental Sustainability Research Centre · nrd · Wageningen University Wageningen UR · Climate Change Science Institute at Oak Ridge National Laboratory · UTAS


**Work package contacts:** Prof. Ray Ison (ray.ison@open.ac.uk)[1], Dr. Chris Blackmore,[1] Dr. Kevin Collins[1] and Dr. Kate Lonsdale[1]

**Project contacts**: Prof. Neil Powell (Project Leader)[2] and Annemarieke de Bruin (Project manager)[2]

**Contributors to this brief** Prof. Ray Ison, Dr. Chris Blackmore, Dr. Kevin Collins

1 Applied Systems Thinking in Practice Research Group, Engineering & Innovation Department, MCT Faculty, Open University,
2 Stockholm Environment Institute


CADWAGO Website: **www.cadwago.net**