



# Water governance in England

Improving understandings and practices  
through systemic co-inquiry

Workshop report

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RIKSBANKENS  
JUBILEUMSFOND  
THE SWEDISH FOUNDATION FOR  
HUMANITIES AND SOCIAL SCIENCES

The work presented in this report was developed under the CADWAGO project, and funded by VolkswagenStiftung, Compagnia di San Paolo and Riksbankens Jubileumsfond as part of the Europe and Global Challenges programme. CADWAGO stands for 'climate adaptation and water governance: reconciling food security, renewable energy and the provision of multiple ecosystem services'. The three-year project brings together 10 partners from Europe, Australasia and North America in a consortium led by Stockholm Environment Institute. Further information on the CADWAGO project, please visit <http://www.cadwago.net>.

We would like to thank the research participants, who shared their knowledge and experiences in climate change adaptation and water governance, and their organisations for enabling their participation.

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# Chapter 1

## Introduction

The CADWAGO project held two workshops on 'Water Governance in England' at the Open University in London on the 27<sup>th</sup> April 2015 and 10<sup>th</sup> June 2015 respectively. The workshops aimed to engage researchers, policy-makers and practitioners in a systemic co-inquiry in order to collectively develop a better understanding of the current water governance situation, and how it might be improved in practice.

This report presents an overview of the workshops' design, then summarises the outputs and outcomes from each of the workshops. The specific learning and insights arising from the workshops will inform the design of more sustainable and resilient approaches to water governance and climate change adaptation in the UK and elsewhere in Europe.

## Chapter 2

# Workshop overview

### 2.1 Participants

Potential participants, representing a range of sectors relating to water governance, were identified by stakeholder analysis; some of those identified were known through existing networks from current and previous research, and some were suggested by other participants. Approximately 55 potential participants were invited by the CADWAGO researchers. A flyer was provided to make explicit both the purpose of the workshops and the expectations of the participants ([Appendix A](#)). Participants from almost all major stakeholder groups were represented at the workshop ([Table 2.1](#)); notable omissions at the first workshop included representatives from the water companies, who are considered to be key stakeholders in water governance. Representatives from these companies were invited to participate, but either declined or were unable to attend the workshop.

**Table 2.1** Workshop participants

Stakeholder group	Organisation	Name	Workshop 1	Workshop 2
CADWAGO researchers	Open University	Chris Blackmore	✓	✓
		Kevin Collins	✓	✓
		Natalie Foster	✓	✓
		Ray Ison	✓	✓
Government bodies	DEFRA	Richard Cole	✓	✓
		Ashley Holt	✓	✓
	Environment Agency	Damian Crilly	✓	
		Clare Johnstone	✓	
	Natural England	James Grisceff	✓	
	Consultants	Cascade Consulting	Kieran Conlan	✓
WRc		Jennifer Horn	✓	✓
Independent consultants		Chris Ryder	✓	
		Alex Inman	✓	
		John Colvin		✓
NGOs	The Rivers Trust	Arlin Rickard	✓	✓
	NFU	Paul Hammett	✓	✓
	Water UK	Sarah Mukherjee		✓
	RSPB	Mark Robins		✓
Academics	Sheffield University	Bob Harris	✓	
	Middlesex University	Paula Micou		✓

### 2.2 Workshop design

The one-day workshops were designed as a systemic co-inquiry into water governance. Co-operative (or collaborative) inquiry was proposed by John Heron in 1971, and subsequently developed with

Peter Reason. It involves researching *with* people, rather than *on* people. Thus, participants are able to be involved as co-researchers, and may contribute to the design, implementation, monitoring and evaluation of the research (Heron and Reason, 2001). Systemic co-inquiry is a specific type of co-inquiry which draws on systems theories, methodologies and techniques (Blackmore, 2009; Checkland, 2002; Dewey, 1933; Ison, 2010; West Churchman, 1971).

Systemic co-inquiry is a mode of investigation that is open to changing situations, pursuing new directions, and engaging with new or different theoretical/methodological frameworks. In contrast to programmes and projects, which tend to focus on timelines and outputs, systemic co-inquiries proceed by enacting a social learning process with those who have a stake in a situation experienced as problematic or as presenting an opportunity. Thereby, they enable participants to begin their investigations in a different emotional space to that which accompanies the emotion of certainty usually associated with programmes and projects. Systemic inquiries are flexible and do not always have a specific end-point: there is no 'right' way to do a systemic co-inquiry. They can precede, run in parallel with, or incorporate a programme or project, and they can be as short as a few hours or run indefinitely until those engaged agree to stop (Ison, 2002; Ison *et al.*, 2004; Wallis, 2015).

The two workshops focused on the current and future water governance situation in England respectively. Each workshop comprised an informal introduction, a series of three interactive participatory sessions, and short presentations (Tables 2.2 and 2.3). The participatory sessions were designed to actively engage participants in systems thinking, modelling, negotiating and evaluating in order to explore water governance, to formulate problems and opportunities, to identify feasible and desirable changes, and identify opportunities for concerted actions. The systems concepts and techniques used in the participatory sessions, and the purposes for their use, are explained where appropriate in Chapters 3 and 4. The short presentations enabled the participants to contribute different perspectives of the current and future water governance situation.

**Table 2.2** Workshop 1 schedule

Time	Session
09:00 – 09:30	<i>Registration and coffee</i>
09:30 – 09:40	Welcome, introductions and house-keeping
09:40 – 09:50	Aims of the day
09:50 – 10:00	Introduction to CADWAGO
10:00 – 11:00	Participatory session 1: Understanding the water governance situation <i>Coffee available during this session</i>
11:00 – 11:30	Plenary 1: Key points and reportage
11:30 – 12:15	Presentations 1 + Q&A: Aspects of water governance
12:15 – 12:45	Participatory session 2: Modelling water governance
12:45 – 13:15	<i>Lunch</i>
13:15 – 14:00	Participatory session 2: Modelling water governance (continued)
14:00 – 14:30	Plenary 2: Key points and reportage
14:30 – 15:15	Presentations 2 + Q&A: Challenges to water governance
15:15 – 15:30	<i>Coffee</i>
15:30 – 16:00	Participatory session 3: Rethinking water governance
16:00 – 16:15	Plenary 3: Key points and reportage
16:15 – 16:30	Round-up, next steps and close

**Table 2.3** Workshop 2 schedule

Time	Session
09:00 – 09:30	<i>Registration and coffee</i>
09:30 – 09:40	Welcome, introductions and house-keeping
09:40 – 09:50	Aims of the day
09:50 – 10:00	Introduction to CADWAGO
10:00 – 10:45	Participatory session 1: Imagining future water governance in England <i>Coffee available during this session</i>
10:45 – 11:15	Plenary 1: Key points and reportage
11:15 – 11:45	Presentations 1 + Q&A: Challenges for future water governance
11:45 – 12:45	Participatory session 2: Modelling future water governance in England
12:45 – 13:15	<i>Lunch</i>
13:15 – 13:45	Plenary 2: Key points and reportage
13:45 – 14:15	Presentations 2 + Q&A: Opportunities for innovation in water governance
14:15 – 15:15	Participatory session 3: Actions for future water governance in England
15:15 – 15:30	<i>Coffee</i>
15:30 – 16:15	Plenary 3: Key points and reportage
16:15 – 16:30	Round-up, next steps and close

It was assumed that the participants had at least some knowledge and experiences of the issues associated with water governance, but no prior knowledge or experiences in using systems techniques. A brief explanation of the relevant techniques was given before each task in the participatory sessions. CADWAGO researchers from the Open University acted as facilitators throughout the workshop, to help and guide the participants through activities and discussions in a timely manner. It is acknowledged that the design of the workshop is always a choice, and the process and facilitation will always shape the outcomes. The views expressed, and encapsulated in the models for the purpose of facilitating discussion, represent those of the workshop participants based on their knowledge and experiences of water governance.

## Chapter 3

# Workshop 1: current water governance

The first workshop focused on current water governance in England. [Sections 3.1 to 3.3](#) report on each of the three participatory sessions respectively, providing a summary of the tasks undertaken and the outcomes. [Section 3.4](#) provides a summary of the presentations given by the workshop participants between the participatory sessions.

### 3.1 Participatory session 1

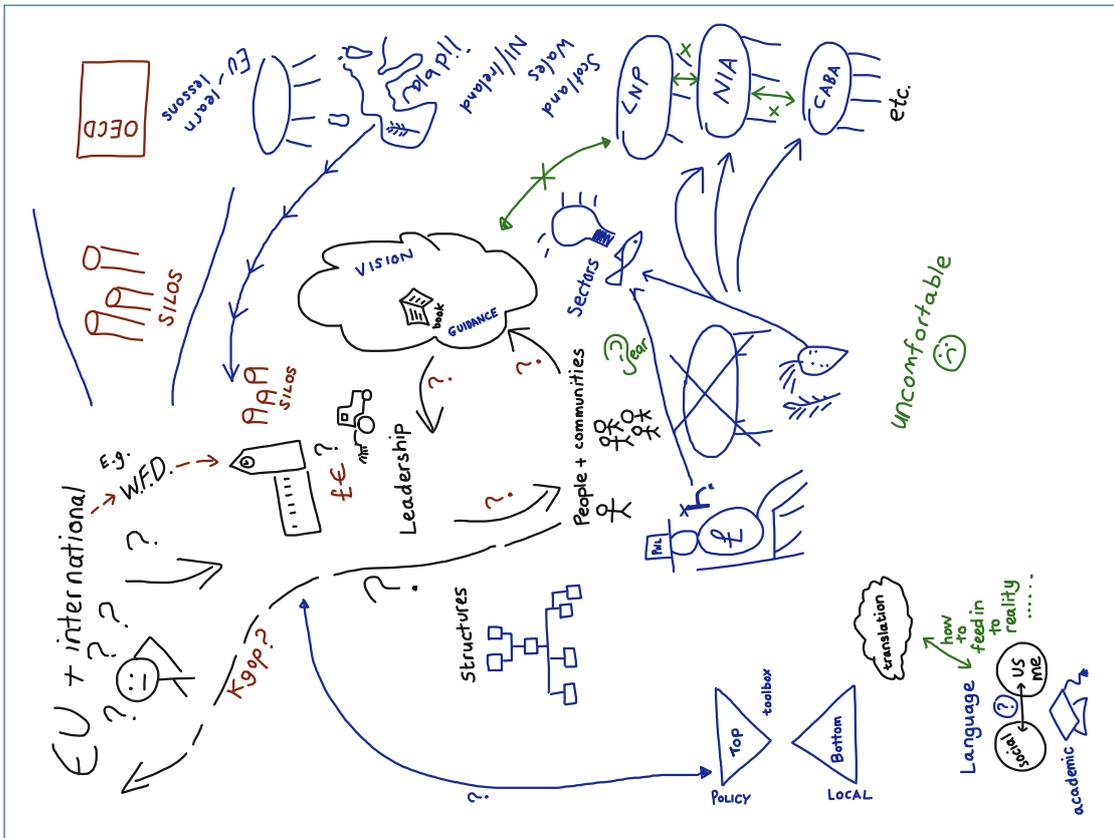
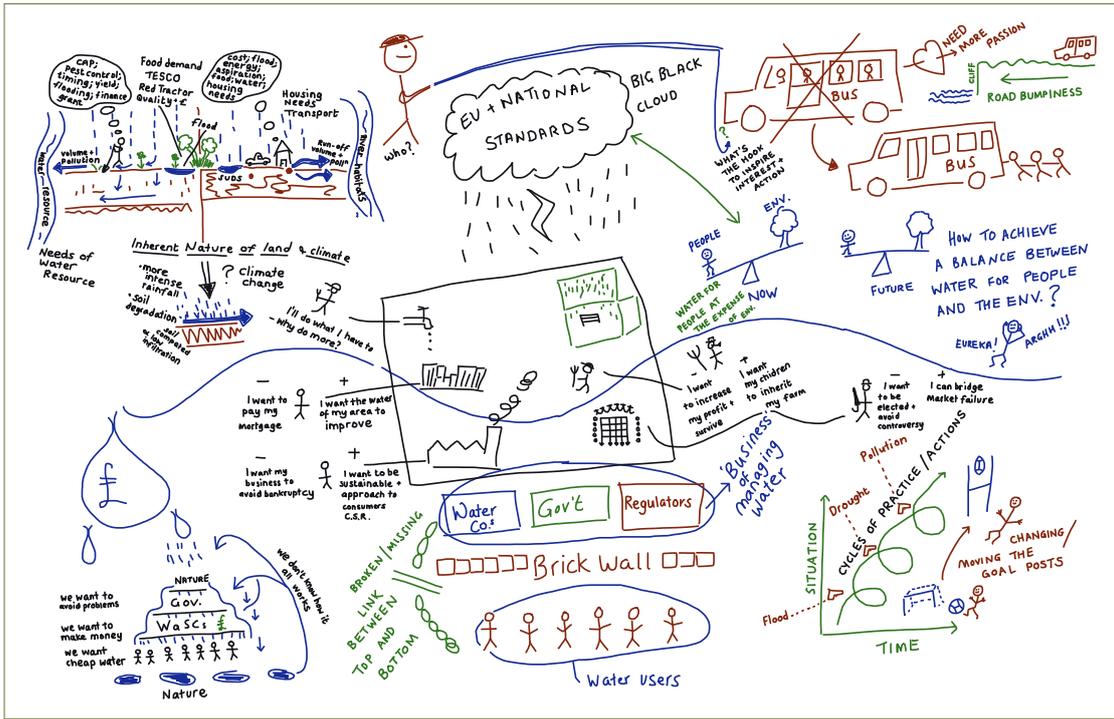
The first participatory session focused on developing systemic awareness of the current water governance situation by exploring the participants' experiences using rich pictures. Systemic awareness — an awareness of the situation as a whole — comes from exploring and understanding cycles, counter-intuitive effects and unintended consequences. The process of developing systemic awareness begins with 'standing back' and resisting pressures to rush towards a preconceived solution by exploring (or re-exploring) the wider context of a situation using tools and techniques which encourage divergent thinking, such as rich pictures ([Open University, 2006a](#)).

#### 3.1.1 Rich pictures

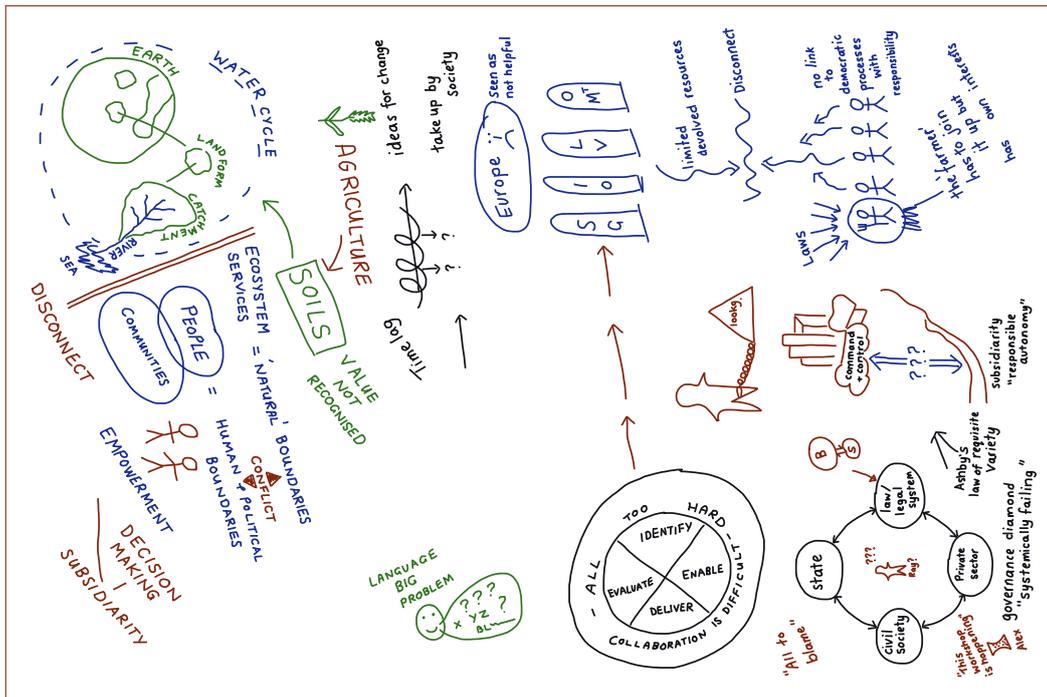
Rich pictures originate from soft systems methodology ([Checkland, 1981, 2000](#); [Checkland and Scholes, 1990](#)). They comprise a pictorial representation of anything and everything that is perceived to be relevant to a given situation by the person (or people) who drew it. The process of collectively creating a rich picture entails both drawing and describing what is being drawn to the other participants in the group; participants should also include themselves within the rich picture to make explicit their own perspectives. The process continues until all of the participants responses have been discussed and recorded on the rich picture (see [Open University, 2006b](#) for further details).

Working together in small groups, the workshop participants created three rich pictures (one per group) depicting the main actors and elements in the current water governance situation and the relationships between them from their perspectives ([Figure 3.1](#)). Subsequently, they were asked to collectively identify themes emerging from their rich pictures. Then, by facilitated discussion, the rich pictures and emergent themes from each group were talked through in plenary. The aim here was to capture their perspectives of the situation and to communicate it to others; furthermore, to start the process of thinking systemically about the problem situation — viewing it from multiple perspectives — and to initiate dialogue between the participants.

The rich pictures depict the current water governance situation as a dynamic and complex 'mess' of actors and elements. For example, they show conflicting interests within and between different stakeholder groups, cycles of activities triggered by water crises such as floods, droughts and pollution, as well as governance structures, and the influence of EU and national standards on water governance practices.



**Figure 3.1** Rich pictures of the current water governance situation in England drawn by the workshop participants (redrawn from the versions created at the workshop)



(c) Group 3

**Figure 3.1 (continued)** Rich pictures of the current water governance situation in England drawn by the workshop participants (redrawn from the versions created at the workshop)

From the rich pictures, the participants identified 15 themes (5 per group):

#### Group 1

- Uncertainty regarding accountability (ownership) of water governance;
- Lack of incentives for water/sewerage companies to consider the whole environment;
- Principal aim/goal of water governance to achieve EU and national standards;
- Need for a call to action; and
- Disconnect between water 'managers' and water 'users'.

#### Group 2

- Relationship between policy and regulation;
- Levels of governance — local-global, top-bottom?;
- Communication needs to be all ways — up, down and across organisations/sectors;
- Scale of systemic governance problem — global and/or local?; and
- Leadership - who has the big picture?.

#### Group 3

- Series of disconnects between actors and elements;
- Local government needs an overhaul — catchment-based approach need legitimacy;
- Current system rewards certain personality types;
- Governance has a pendulum effect; and
- Key to success is too narrow — leaves out social, systemic effects of EU policies, systemic relationship between soil and water, questions about the efficiency of farming system as well as catchment-based approach and WFD 2021–2027.

The process of collaboratively creating the rich pictures in small groups was effective in terms of initiating and engaging the participants in dialogue *with each other* about their experiences of water governance. It enabled them to voice their own perspective, and also to see water governance from a variety of different partial perspectives, and to appreciate and learn from the different perspectives because of the different insights into water governance that they evoked.

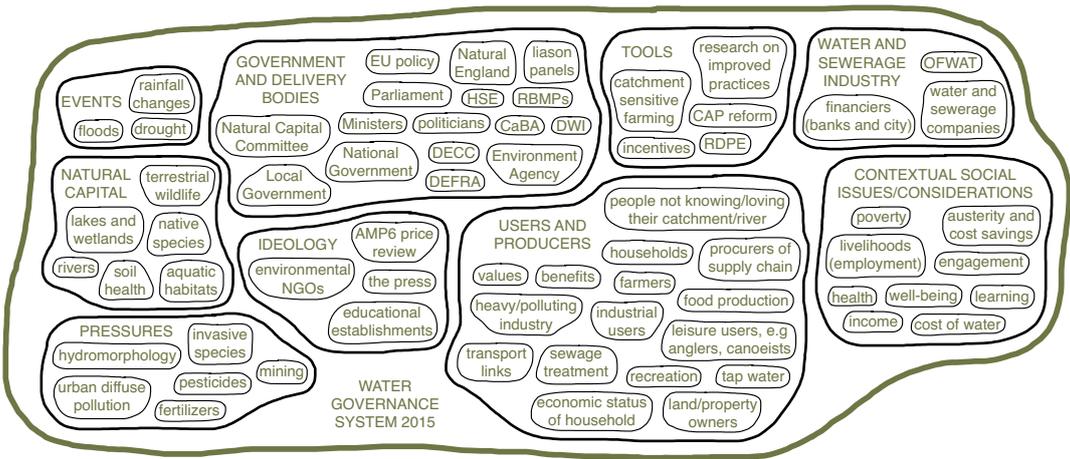
### 3.2 Participatory session 2

The second participatory session focused explicitly on developing shared understandings by defining the participants' system of interest (i.e. the current water governance system from their point of view) using a combination of systems maps, BATWOVE analysis and root definitions to identify the key parts of the system and to formulate a concise description of it.

#### 3.2.1 Systems maps

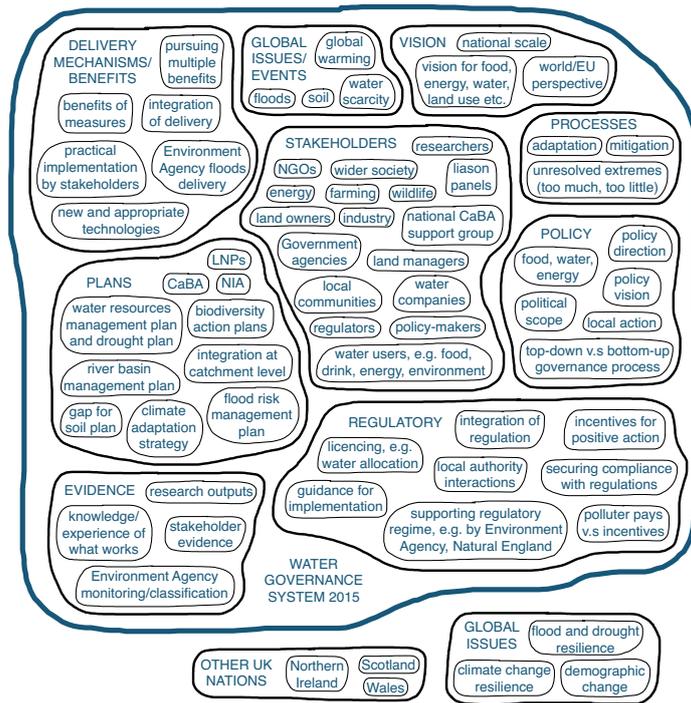
Having identified themes for consideration from techniques such as rich pictures, it is useful to identify boundaries within a system of interest, and to classify components of the system within a nested set of boundaries. This process helps to develop new insights into the system from the participants perspectives. Systems maps, which were developed by the Open University for teaching purposes, are an important modelling technique for this purpose (Open University, 2006a).

The participants created three systems maps (one per group) identifying the actors and elements incorporated within their system of interest, and those in its environment which affect it and are affected by it (Figure 3.2). The immediate aim was to define the structure and boundary of the participants' system of interest. In doing so, the intention was to further develop the participants' systemic awareness, working towards achieving a shared understanding of their system of interest.

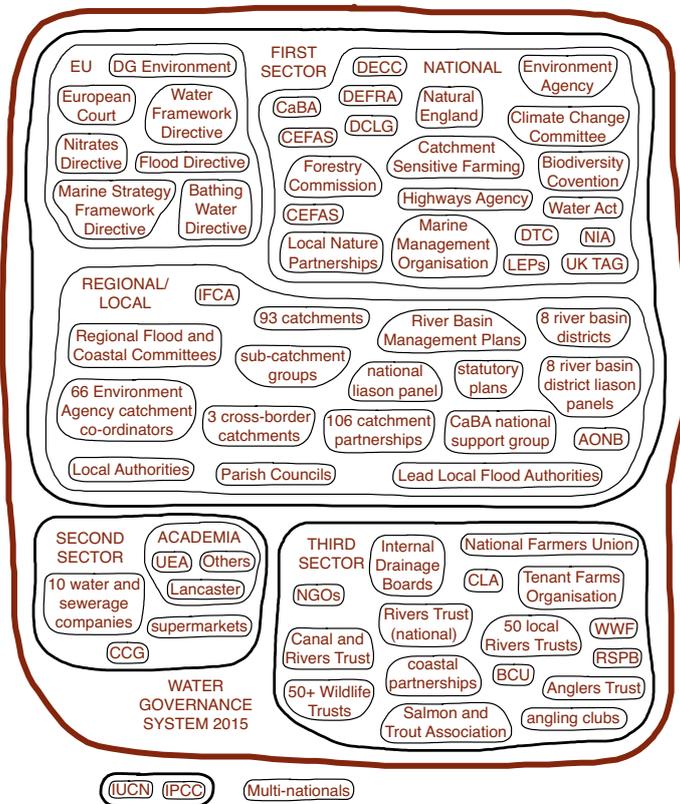


(a) Group 1

Figure 3.2 Systems maps constructed by the workshop participants (redrawn from the versions created at the workshop)



(b) Group 2



(c) Group 3

Figure 3.2 (continued) Systems maps constructed by the workshop participants (redrawn from the versions created at the workshop)

The systems maps enabled the identification of the actors and elements in the water governance situation which the participants perceived to be important. By completing the systems maps, the participants were able to appreciate that few people had an overall understanding of the elements in the system (or the system as a whole), and did not always agree on where the boundaries should sit. The task also surfaced issues such as knowing the many acronyms used in the systems maps. The participants stated that they found the task challenging because it was difficult to decide what was relevant or not, but that it was worthwhile in terms of helping them to unravel the complex 'mess' depicted in the rich pictures. Thus, although the systems maps are a simplified representation of the water governance situation, the task of constructing them implicitly developed shared understandings of the situation, and served to inform subsequent tasks in the workshop.

### 3.2.2 BATWOVE and root definitions

The key to understanding any system of interest is to identify its purpose, which can be done by developing a root definition. Root definition is a part of the terminology of soft systems methodology (Checkland, 1981, 2000; Checkland and Scholes, 1990). It is a statement that concisely describes a system of interest, and it should include mention of all the key elements of the system. It takes the form: *a system to do P (what) by Q (how) in order to achieve R (why)*. Various mnemonics have been suggested to help the process of formulating a root definition; BATWOVE (Beneficiaries, Actors, Transformation, Worldview, Owners, Victims and Environmental constraints) was used in this instance because it makes explicit the beneficiaries and victims of the system.

Working together in groups, the participants identified the key parts of their system of interest from Figure 3.2 using the mnemonic BATWOVE, and formulated three root definitions (one per group) incorporating all of the key parts (Table 3.1). Subsequently, the root definitions were shared with the other workshop participants in plenary. The aim here was to provide a base from which to identify feasible and desirable changes to improve the current water governance situation, and also to alleviate clashes of perspective and purpose that can lead to conflict when identifying such changes, or inaction because there is no agreement on *what* the objective of intervention is, *how* it should be achieved and for what purpose (*why*) (Open University, 2006a).

Albeit that the groups used different wording in their BATWOVE analyses and root definitions, it is notable that there are some significant areas of overlap and consensus about the aim (W) and objective (T) of the current water governance system, as well as about the persons involved (BAOV) and the constraints imposed upon it (E). As with the systems maps, the participants stated that they found the task challenging, particularly in terms of staying focused on the current water governance situation rather than what it ought to be in the ideal world; this is perhaps an inherent consequence of the fact that in trying to understand what is done, there is a tendency for discussion about what could (or should) be done, i.e. how it could be improved in practice. However, at least one of the participants noted that 'staying with the current situation' and 'having the opportunity to explore it thoroughly from multiple viewpoints' was particularly helpful.

Note that these root definitions represent the perspective of the workshop participants, and thus, they are relevant only to the participants in the context of the workshop. Other people may have different worldviews, and hence, have a different system of interest. Nonetheless, together with the rich pictures and systems maps, the root definitions sufficed to bring about common understandings and shared expressions of the water governance situation from the participants' perspectives, from which feasible and desirable changes (improvements) were later identified.

**Table 3.1** BATWOVE and root definition applied to the water governance situation by the workshop participants (redrawn from the versions created at the workshop)

Group 1

<b>Beneficiaries</b>	Politicians, ministers, bill payers, fish and shellfish industry, water users/consumers, some ecosystems, recreational users, irrigators
<b>Actors</b>	Press (media), academics, teachers, farmers, NGOs and other third sector volunteers, water and sewerage companies, Environment Agency, Natural England, OFWAT
<b>Transformation</b>	Public water supplied and waste water treated
<b>Worldview</b>	Provide goods and services to society, provide clean drinking water, natural capital under-valued
<b>Owners</b>	Property owners, water and sewerage companies, Government, voters, regulators, EU Parliament and Council
<b>Victims</b>	Ecosystems, current citizens, future generations
<b>Environment</b>	Climate change, capitalism dominates, risk aversion
<b>Root definition</b>	A disconnected and opaque system, nominally owned by everyone but managed by EU, Government and water companies, to provide goods and services by delivering public water supply and waste water treatment using inefficient high energy, engineering, top-down regulatory approaches in order to support economic growth and welfare

Group 2

<b>Beneficiaries</b>	People — consumers of drinking water and food, anglers, canoeists, water companies
<b>Actors</b>	Consumers, water companies, policy-makers, regulators, farmers, food producers, NGOs, spatial planners
<b>Transformation</b>	Supply potable water to society as part of an integrated approach
<b>Worldview</b>	We need to find a better balance between water for people and the environment
<b>Owners</b>	DEFRA, Environment Agency and ?
<b>Victims</b>	People — farmers, people experiencing our water footprint outside the UK, those who can't afford to pay bills, water companies, swimming pool owners, garden lawns; and environment — flora and fauna
<b>Environment</b>	Regulatory regime favours drinking water, public supply favours drinking water in water scarcity, limitations in abilities to respond to drought (e.g. hosepipe bans)
<b>Root definition</b>	A system that privileges the needs of consumers of drinking water over the needs of farmers and water exporters in times of drought to avoid civil unrest through the extensive regulatory regime that we sustain

Group 3

<b>Beneficiaries</b>	Supermarkets, consumers, water companies, agro-chemical companies, current and future generations
<b>Actors</b>	Farmers, supply chain managers, catchment communities, catchment citizens
<b>Transformation</b>	Trade and processing, supermarket selling environment, distribution of food security, science and technology, enlightenment, responsibility for government not taken → responsibility taken
<b>Worldview</b>	Cheap food trumps everything, water is 'common'
<b>Owners</b>	Shareholders, customers, society
<b>Victims</b>	Ecosystem services, farmers livelihoods in the long-term, future generations, biodiversity
<b>Environment</b>	Ignorance, adversarial, conspiratorial, dis-functional institutional arrangements, need for an environment of transparency
<b>Root definition</b>	A system to position the current water governance system to a citizen-based 'commons management' mode in order to act responsibly in the interests of future generations

### 3.3 Participatory session 3

The third participatory session focused on identifying systemically feasible and desirable changes in the participants' situation of interest. It used the systems models created in the previous participatory sessions (and the insights that emerged from them) to inform and structure discussion about the current water governance situation and the actions required to improve it.

#### 3.3.1 What 'is' versus what 'ought to be'?

Systemically feasible and desirable changes (perceived improvements) can be identified by comparing what 'is' with what 'ought to be' from a theoretical perspective (Ulrich and Reynolds, 2010). Working together in groups, the participants compiled a table showing in one column what is happening in the current situation, and in another column, what perhaps ought to be done in an ideal world (Table 3.2). The aim here was to think systemically about how the current water governance situation could be improved in practice.

**Table 3.2** 'Is' versus 'ought to be' in the context of water governance from the perspective of the workshop participants (redrawn from the versions created at the workshop)

'Is'	'Ought to be'
<b>Group 1</b>	
Natural capital/services under-valued or un-valued	Fully valued natural capital and services
Belief in 'hard' engineering solutions	Belief and trust in catchment management
Market failures	Markets working for ecosystem services (incentives)
Focus on compliance with EU and national standards	EU and national standards is one of many drivers/measures of performance
Disconnected system	Link between water 'users' and providers/managers
<b>Group 2</b>	
Some sectors lose out when there's not enough water to go around	To have coping strategy to manage water scarcity fairly
Catchment-based approach (CaBA) is a declared method by Government for managing the aquatic environment but is not yet working	To be able to understand and address all of the obstacles to delivering an effective catchment-based approach
Cautious political decisions about what should happen in crisis	A clear vision for a more certain allocation of water as part of evidence-based wider water management
Policy is driven by evidence largely from Government agencies	Policy to be driven by a wide evidence base, drawing from all available sources
<b>Group 3</b>	
Inequitable power arrangements	More equitable power arrangements
Narrow valuation by Treasury	Wider valuation on socio-ecological by Treasury
City infrastructure beyond design thresholds	Liveable cities
Distrust between actors	Accommodation in PPPs
Lack institutional arrangements for co-operation	Co-operation and collaboration, common platform for NGOs
Competition for limited resources	?
Eco-indifference	Citizen eco-literacy, context specific responsible autonomy, local autonomy and accountability, democratic accountability, security of income

As with the first and second participatory sessions, there were choices of focus in considering what 'is' and what 'ought to be' that might well be different with a different group of participants at a different time. In this sense, the outputs from this session (and for the workshop as a whole) are a snapshot of issues emerging and experiences of relevance to water governance in England. The task concurrently brought to an end the first cycle of inquiry and provided a start point for the second cycle of inquiry. What should be, i.e. what is desirable, and what could be, i.e. what is both feasible *and* desirable, were key topics in the second workshop, which focused on future water governance in England (see [chapter 4](#)).

### 3.4 Presentations

Systems thinker, West Churchman (1971), once claimed that systems thinking begins when you see the world through the eyes of another, which conveys that a key aspect of developing systemic awareness is to allow for multiple partial perspectives to inform a decision-making process. Adopting this principle, five of the workshop participants presented their perspective of the current water governance situation to the other workshop participants; in doing so, the presentations formed a key part of the co-inquiry. The participants were asked to consider the presentations as part of their inquiry and use them to explore their own thinking and ideas in the discussions. Thus, the presentations contributed new perspectives, evidence and understandings of different aspects of water governance. Collectively, the presentations covered a diverse range of topics such as the impact of the Water Act 2014, water abstraction reform, the 'gap' between top-down and bottom-up governance approaches, and communication and language issues. The presentations slides (including those used by the workshop facilitators) are provided in [Appendix C](#).

### 3.5 Evaluation

Participants were asked to provide anonymous responses to two evaluation questions: 1) What have you found useful? and 2) How can the workshop be improved? The participants' responses to these questions are summarised in [Table 3.3](#).

**Table 3.3** Participants' responses to workshop evaluation questions

What have you found useful?	How can the workshop be improved?
Opportunity to listen to informed comments and ideas	A bit more explanation of <i>why</i> systemic co-inquiry — how does it help us understand?
Opportunity for blue-sky thinking	It would have been good to have some other private sectors
Good range of people	
System-focus of inquiry	
Chance to examine the current system thoroughly	
Mix of interactive and presentations; liked interactive first	
Good to get stuck into producing outputs	
Sufficiently balanced between conceptual and practical	
Right balance ambition for the exercises within the time; good OU preparation of the exercises really helped - well done!	

## Chapter 4

# Workshop 2: future water governance

The second workshop focused on future water governance in England. [Sections 4.1 to 4.3](#) report on each of the three participatory sessions respectively, providing a summary of the tasks undertaken and the outcomes. [Section 4.4](#) provides a summary of the presentations given by the workshop participants between the participatory sessions.

### 4.1 Participatory session 1

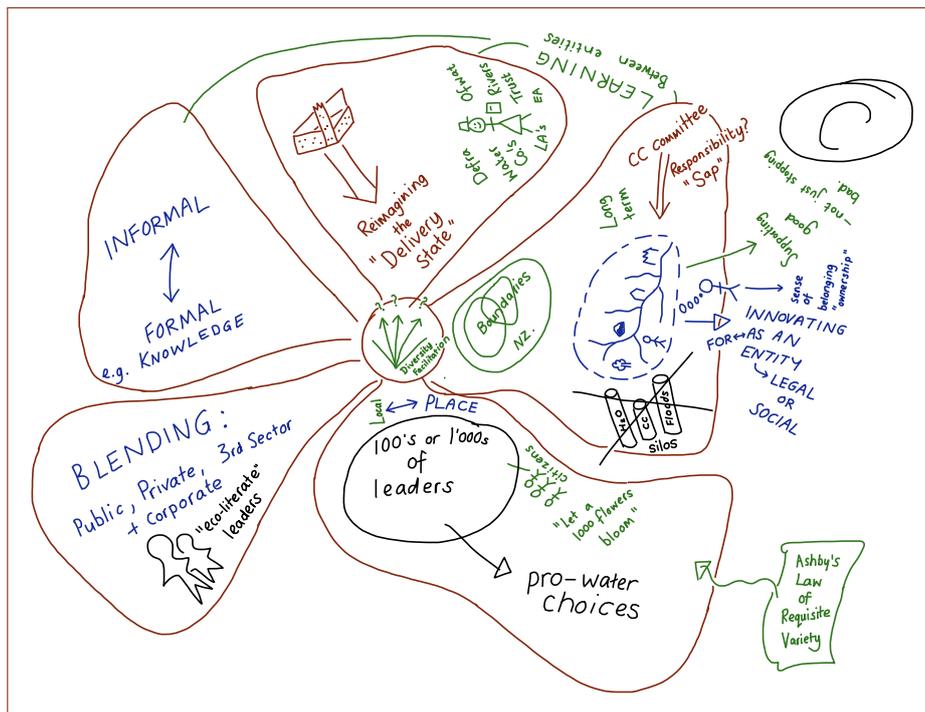
Building on the outcomes from the previous workshop, the first participatory session focused on developing the process of thinking systemically about how the current water governance situation could be improved in practice by exploring the participants' insights and ideas using rich pictures.

#### 4.1.1 Rich pictures

Rich pictures were used as a means of capturing, and communicating to others, the participants' perspectives of what the water governance situation *ought to be* in an ideal world, based on their own understandings, knowledge and experiences. Working together in small groups, the workshop participants created three rich pictures (one per group) depicting the main actors and elements in their 'ideal' water governance situation and the relationships between them from their perspectives ([Figure 4.1](#)). Subsequently, they were asked to collectively identify themes emerging from their rich pictures. Then, by facilitated discussion, the rich pictures and emergent themes from each group were talked through in plenary. The aim here was to capture their perspectives and ideas about water governance in the ideal world, and to communicate it to others; and also, to initiate dialogue between the participants.

The rich pictures again depict the 'ideal' water governance situation as a dynamic and complex 'mess' of actors and elements. However, in contrast to the rich pictures from the first workshop, these rich pictures show water governance as a virtuous circle (or cycle) in which the various different actors and elements in the situation work together towards shared goals. For example, there is a distinct focus on social/community-led learning and action, shared ownership and responsibility, and collaboration. There is also more emphasis on recognising (and measuring progress towards) multiple benefits of water governance, including human health and well-being, in addition to water quality and other legislative standards.





(c) Group 3

**Figure 4.1 (continued)** Rich pictures of an ‘ideal’ water governance situation in England drawn by the workshop participants (redrawn from the versions created at the workshop)

From the rich pictures, the participants identified 15 themes (4–6 per group):

Group 1

- Self-organisation, enabled by policy/ideological state approach;
- Valuing nature in a different way (embedded in a system);
- Virtuous circle: capital, natural capital, and social well-being;
- Crises, social movements and problems leveraged and cracked current blocks of privilege and power; and
- New ideas flow in through new global and national knowledge networks.

Group 2

- Interactions between people *and/about* the environment;
- Many goals, achieving multiple benefits;
- "One vision" realised through subsidiarity principle (local governance);
- Motivation — stick and/or carrot?
- Collaboration rather than competition; and
- Culture change, planning for the long-term.

Group 3

- How can we maintain a creative relationship between formal and informal, e.g. knowledge?;
- Who is the ‘conductor’? Defra, Ofwat, Environment Agency, local authorities, water companies, Rivers Trusts?;
- Creating the stages for the emergence of ‘catchment theatre’; and
- Creating the conditions for citizen leadership and choice.

Consistent with the first workshop, the process of collaboratively creating the rich pictures in small groups was effective in terms of initiating and engaging the participants in dialogue *with each other* about water governance. It was particularly effective in this instance for revealing and over-coming (mis-)perceived conflicts of interests and/or understandings between some of the participants resulting from different people using different language to describe the same thing (e.g. an issue, concern, idea etc.).

## 4.2 Participatory session 2

The second participatory session focused explicitly on developing shared understandings by identifying the key parts of the participants' system of interest (i.e. the 'ideal' water governance system from their point of view) using BATWOVE analysis, and formulating a concise description the system using root definitions.

### 4.2.1 BATWOVE and root definitions

Working together in groups, the participants identified the key parts of their system of interest from [Figure 4.1](#) using the mnemonic BATWOVE, and formulated three root definitions (one per group) incorporating all of the key parts ([Table 4.1](#)). Subsequently, by facilitated discussion, the root definitions were debated and amended until a 'preferred' root definition was collectively agreed ([Figure 4.2](#)). The aim here was arrive at an accommodation of perspectives amongst the participants regarding *what* the objective of the water governance system should be in the ideal world, *how* it should be achieved and for what purpose (*why*); and furthermore, to provide a base from which to begin to identify actions to improve water governance in the real world.

---

"An iterative, place-based, reflexive, English learning system operated by a 'system operator' on behalf of everyone and within a set framework, to optimise the management of water in all its forms by: engaging and empowering society to make equitable decisions and take collective/concerted actions; developing new markets for valuing natural capital; and developing social infrastructure for knowing the value of natural capital, in order to deliver human health and well-being (with recognition that health and well-being depends upon a healthy, functioning natural environment) within the constraints of social, environmental and economic capital"

---

**Figure 4.2** An 'ideal' water governance system in England, as collectively defined by the workshop participants

Many of the ideas and suggestions about what 'ought to be' in the ideal world, which were first conceived in the previous workshop ([section 3.3](#)) and then explored in the rich pictures in this workshop ([Figure 4.1](#)), were further developed and clarified in these root definitions. The decision to collectively formulate a 'preferred' root definition — which was adapted from one of the root definitions developed by the groups — was based on the recognition that whilst each of the root definitions was unique in the sense that they each stated a different aim (W) and objective (T), there were also also

**Table 4.1** BATWOVE and root definition applied to the 'ideal' water governance situation by the workshop participants (redrawn from the versions created at the workshop)

Group 1	
<b>Beneficiaries</b>	Citizens, serving industries, new entrepreneurs, water companies, Government, farmers, natural environment
<b>Actors</b>	Citizens, serving industries, new entrepreneurs, water companies, Government, farmers, natural environment, educational apparatus
<b>Transformation</b>	Knowledge and services not flowing → knowledge and services flowing
<b>Worldview</b>	It is desirable to move from a vicious to a virtuous circle between quality of life, economic activity and natural capital
<b>Owners</b>	Citizens, serving industries, new entrepreneurs, water companies, Government, farmers, natural environment
<b>Victims</b>	People stuck in the old ways (status quo)
<b>Environment</b>	20 <sup>th</sup> century capitalism dominates; biased regulatory regime; aversion to risk and innovation; fear of radical reframing
<b>Root definition</b>	A system of governance to enable knowledge and science flows by: community self-organisation and representation; investing and developing a social infrastructure for learning the value of natural capital and social well-being; developing new market mechanisms; and continuing to evolve and adapt in order to enable a growing virtuous circle between quality of life, economic activity and natural capital
Group 2	
<b>Beneficiaries</b>	Citizens (people) and the environment upon which they depend
<b>Actors</b>	Society (with multiple/specific roles)
<b>Transformation</b>	Optimize the management of water in all its forms
<b>Worldview</b>	Human health and well-being
<b>Owners</b>	Everyone
<b>Victims</b>	People whose current granted rights/interests will be adversely affected by the 'ideal' governance system, e.g. water abstractors
<b>Environment</b>	social, environmental and economic capital
<b>Root definition</b>	An iterative learning system operated by a 'system operator' on behalf of everyone and within a set framework, to optimise the management of water in all its forms by engaging and empowering society to make equitable decisions and take collective/concerted actions, in order to deliver human health and well-being (with recognition that health and well-being depends upon a healthy, functioning natural environment) within the constraints of social, environmental and economic capital
Group 3	
<b>Beneficiaries</b>	Citizens, consumers, entrepreneurs, places
<b>Actors</b>	CaBA, DEFRA, key NGOs, artists and dramaturgists, landowners, local community groups, champion/key individuals
<b>Transformation</b>	Conditions not created → conditions created
<b>Worldview</b>	Citizen-led leadership and choice will deliver adaptive governance
<b>Owners</b>	Citizens, facilitators, civil society organisations
<b>Victims</b>	?
<b>Environment</b>	Political elite, "Establishment", non-reflexive researchers and professionals, economists?, citizens not part of the key ... in governing,
<b>Root definition</b>	A system to create the conditions for orchestrated, citizen-led leadership and choice in adaptive catchment governing, which is experienced as empowering and innovative

some notable similarities, particularly regarding who should (or could) be involved or affected by the system (BAOV), and to a lesser extent, about the constraints imposed upon it (E).

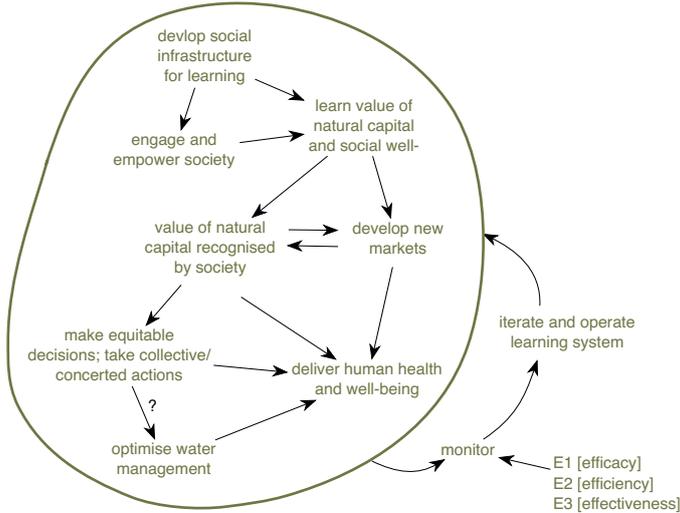
As with the root definitions in the first workshop, the participants said that they found the task challenging; and it was also later acknowledged that some of the participants found it difficult (but not insurmountable) to adapt from the root definition developed by their group to the ‘preferred’ root definition in the subsequent participatory session. However, as a whole, the task served to bring about a common understanding and shared expression about water governance in the ideal world, which informed the tasks in the subsequent participatory session.

### 4.3 Participatory session 3

The third participatory session focused explicitly on identifying actions to improve water governance by making conceptual (system) models relevant to the ‘ideal’ water governance situation, and using the models to inform and structure discussion about the current situation and the actions required to improve it.

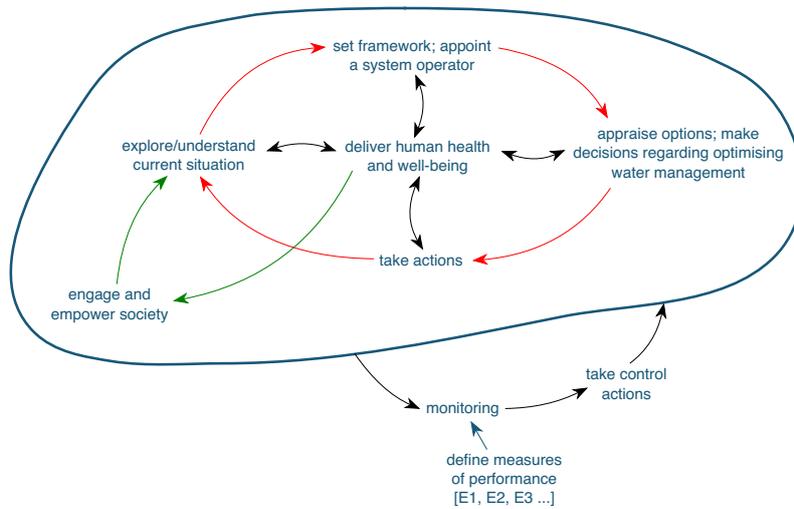
#### 4.3.1 Conceptual models

Working together in groups, the participants created three conceptual models (one per group) representing the sequence of activities that would have to be undertaken if the ‘ideal’ water governance system described in Figure 4.2 was to function in the real-world (Figure 4.3). Then, the conceptual models were compared with each other, and with the current water governance situation, by asking pertinent questions such as: If this activity is missing in the real-world, is that a good thing? Does it matter? What are the implications of filling a gap? How might it be filled? (Checkland, 1985). The purpose of the task was to engage the participants in further discussions about water governance, and the actions required to improve it.

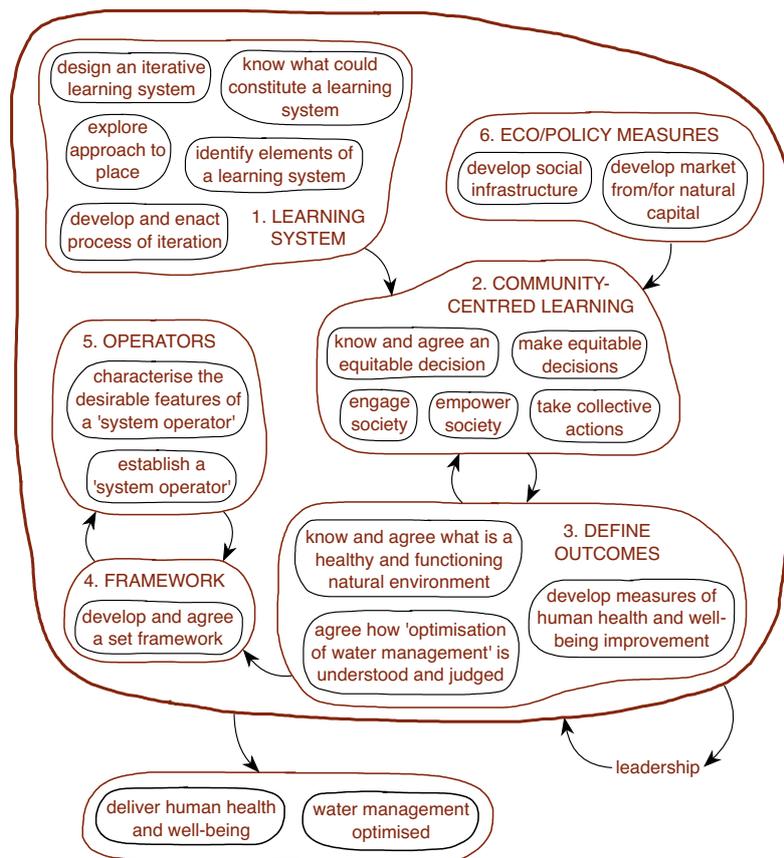


(a) Group 1

Figure 4.3 Conceptual models constructed by the workshop participants (redrawn from the versions created at the workshop)



(b) Group 2



(c) Group 3

**Figure 4.3 (continued)** Conceptual models constructed by the workshop participants (redrawn from the versions created at the workshop)

It is notable that each of the conceptual models recognise that ‘delivering human health and well-being’ is not something that can just be done, but rather that it is an *emergent outcome* of the system as a whole; and at least one of the models recognises that it is also an *input* to engaging people in water governance. In addition, the models show water governance as an iterative learning system, i.e. not something that can be done once to solve the problem situation, but rather something that is ongoing and adaptive to the changing (improving) water governance situation.

The actions to improve water governance, which were identified by the workshop participants using the models as a visual and mental aid, are summarised in [Figure 4.4](#). They fall broadly into four categories: stakes and stakeholding; facilitation; institutions and policies; and knowing and learning about water governance. There was insufficient time at the workshop to explore these actions in detail; however, realising the actions is perceived by the workshop participants to be a key step towards improving water governance in England. To this end, the CADWAGO project is hosting a one-day water governance symposium at the Royal Society in London on 16th September 2015 (see [chapter 5](#)).

## 4.4 Presentations

Consistent with the previous workshop, participants’ presentations formed a key part of the co-inquiry process. In this workshop, four of the participants shared their thoughts, ideas and suggestions about the perceived challenges and innovation opportunities for future water governance. The participants were asked to consider the presentations as part of their inquiry and use them to explore their own thinking and ideas in the discussions. In this way, the presentations contributed new perspectives, evidence and understandings of different aspects of water governance. In summary, the presentations discussed:

- challenges and concerns about how forthcoming water retail markets will operate in practice given the perceived need for further collaboration rather than competition in water governance;
- the history of water governance in England, and in particular the proposed solution of a 1927 Royal Commission to have 100 Catchment Boards responsible for each main river, with powers over individual Drainage Boards.
- Thames Conference 2015 — ‘A Better River; A Better City’ — held at Fishmongers’ Hall in London on 9th June 2015
- contribution of the Catchment Systems Group (an affiliation of academics from various organisations across the UK) to the OECD’s recent consultation on draft Water Governance Principles, leading to some significant changes; and new opportunities such as funding bids, other consultations etc.

The presentations were informal, and hence, there are no presentation slides for this workshop, other than those used for facilitation purposes, which are provided in [Appendix C](#).

## STAKES AND STAKEHOLDING

**Identify stakeholders**

- map and analyse the local/national/global actor network in relation to target beneficiaries, e.g. NIP

**Build stakeholding**

**Reconciling new and emerging roles**

- re-frame catchment co-ordinators as learning system facilitators
- re-frame the role of perceived 'sneaky civil servants' as civic entrepreneurs
- re-organise Environment Agency [and other] departments to facilitate collaboration and learning within and between organisations

**Develop shared ownership and responsibility**

- establish and institutionalise social [learning] processes e.g. CaBA, adaptive management
- consolidate NGOs voice in institutionalising CaBA
- form a group of cross-sectoral water entrepreneurs
- build a coalition of water users in the environment (e.g. anglers, canoeists, swimmers)
- establish a clear feedback process between local, national and international level governance

**Raise awareness about water issues**

- enhance the role of media for common engagement
- produce a UK rivers programme (similar to Coast) led by the BBC/OU
- 'rolling thunder' place-based roadshow, i.e. places with water issues, to fill knowledge gaps, avoid myths

**Meaningfully engage people in water governance**

- engage people in things that they really care about, e.g. local park, bird watching, health and well-being
- better engage with actors for whom water governance is one of many issues, e.g. farmers
- engage more people in real-time monitoring of the water environment, e.g. collection of data/experiences

## FACILITATION

**Identify facilitation needs**

- seek examples/stories of getting hi-level buy-in to a change strategy
- tune change strategy to audience e.g. businesses, new markets
- develop an engagement strategy for Government, e.g. Ministerial visit

**Provide facilitation**

- facilitate learning spaces more strategically
- academic community to galvanise interested parties, e.g. by providing/presenting evidence to critical NGOs/businesses/others for them to choreograph their own responses for lobbying

## IMPROVING WATER GOVERNANCE

## INSTITUTIONS AND POLICIES

**Develop conducive institutions**

**Institutionalise systems thinking and practice**

- develop systems language so that it's accessible to everyone
- develop technologies to enable/facilitate system thinking and practice across organisational, geographic and temporal boundaries
- make reports more accessible to people, e.g. change of language, open access to data
- teach system approaches in schools/colleges/universities, as well as in other organisations, e.g. private, public, commercial, etc.

**Institutionalise catchment science**

- add catchment science to school syllabus

**Develop conducive policies**

- develop a manifesto for better water governance outcomes
- re-frame Water Framework Directive enactment as part of an iterative social learning system
- create a systemic experience of water governance for policy-makers and advisors (in Whitehall)

## KNOWING AND LEARNING

**Co-produce knowledge**

- organise a systemic inquiry between CaBA, Catchment Systems Group and National Capital Committee
- design learning journeys to experience valuing natural capital, optimising water management, and delivering human health and well-being
- innovation 'machine' comprising public, private, corporate and 3rd sector organisations

**Jointly identify what constitutes an improvement**

- establish the 'multiple benefits' that will engage society in water governance
- articulate benefits to wider society
- define/map opportunities for improvements
- explain the risks

**Figure 4.4** Actions to improve water governance in England (summarised and redrawn from the versions created at the workshop using an adapted version of a framework developed by Ison *et al.*, 2004)

## 4.5 Evaluation

Due to time limitations, there was no formal evaluation session. However, some of the participants provided feedback to the CADWAGO researchers following the workshop. The following quotes are representative of the informal comments made by the participants immediately after the workshop:

“Well done to you and OU colleagues for your hard work on these workshops, they have been really helpful and I hope you can continue to play a useful role in helping facilitate change from a neutral position”

“I found the workshop very interesting as well as challenging! It was an intense day, and in my humble opinion, I think a lot of aspects were covered considering the amount of time we had”

“I certainly enjoyed the workshop and have been reflecting on it since”

## Chapter 5

# Summary and next steps

The research presented in this report aimed to engage researchers, policy-makers and practitioners in a systemic co-inquiry in order to improve understandings and practices in relation to water governance in England. The two workshops undertaken as part of the research focused on the current and future water governance situation in England respectively.

The workshops provided the opportunity for participants to share their knowledge and experiences in water governance, and in doing so, brought about an increase in common understandings and shared expressions of the current and future water governance situation. The outputs and outcomes from the workshops demonstrate that the co-inquiry process was generally well-received by the participants, and delivered good progress towards improving (transforming) water governance in England. The participants noted some ways to improve the co-inquiry process which will be reviewed by the research team.

The research will conclude with a Water Governance Symposium at the Royal Society in London on 16th September 2015 (<http://mcs.open.ac.uk/CADWAGO/index.html>). The symposium will showcase CADWAGO's collaborative action research, along with other innovative water governance initiatives from the UK and elsewhere. It will also provide the opportunity for discussion about CADWAGO research, and about emerging issues, experiences and implications for policy and practice. The symposium will conclude with an agenda for transforming water governance in the UK and EU, which will further develop and take forwards the actions from this workshop.

For further information on the CADWAGO project, please visit <http://www.cadwago.net>.

## Appendix A

### Workshop flyer

The flyer shown in [Figure A.1](#) was emailed to all potential participants to provide an overview of the research and the associated workshops. In addition, all participants were required to read a Participant Information Sheet and to sign a Consent Form prior to participating in the workshop.



# Water governance in England

Improving understandings and practices  
through systemic co-inquiry

Monday 27th April 2015, 0930-1630 and Wednesday 10th June 2015, 0930-1630

The Open University, 1-11 Hawley Crescent, Camden Town, London NW1 8NP

You are invited to participate in two one-day workshops on water governance in England. Improving water governance is key to achieving a range of environmental, social and economic objectives linked to food and energy security, land use and climate change. But, the complexity of water governance requires systemic thinking and practice. The aim of the workshops is to collectively develop a better understanding of the current water governance situation in England, and how it might be improved in practice. The workshops will consist of a mix of short presentations and participatory sessions, enabling all participants to contribute their knowledge, experiences and ideas along with representatives from the research, policy and practitioner communities. The specific learning and insights arising from the workshops will be used to help design more sustainable and resilient approaches to water governance and climate change adaptation in the UK and elsewhere in Europe.

The workshops are developed under the CADWAGO project, and funded by VolkswagenStiftung, Compagnia di San Paolo and Riksbankens Jubileumsfond as part of the Europe and Global Challenges programme. CADWAGO stands for 'climate adaptation and water governance: reconciling food security, renewable energy and the provision of multiple ecosystem services'. The three-year project brings together 10 partners from Europe, Australasia and North America in a consortium led by Stockholm Environment Institute. Further information on the CADWAGO project, please visit <http://www.cadwago.net>.

The workshops are FREE to attend, but we are unable to cover transport and accommodation expenses. If you or a colleague would like to participate in the workshops, please email [CADWAGO@open.ac.uk](mailto:CADWAGO@open.ac.uk) by 23rd February 2015. We will then send you further details and joining instructions. Please note that participants will be expected to attend both days.

#### Contact information

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[kevin.collins@open.ac.uk](mailto:kevin.collins@open.ac.uk) 01908 655095

Natalie Foster, Research Associate in Water Governance and Climate Change  
[natalie.foster@open.ac.uk](mailto:natalie.foster@open.ac.uk) 01908 655749



VolkswagenStiftung



RIKSBANKENS  
JUBILEUMSFOND  
THE SWEDISH FOUNDATION FOR  
HUMANITIES AND SOCIAL SCIENCES

Figure A.1 Workshop flyer

## Appendix B

# Photographs from the participatory sessions

Figures B.1 to B.3 show photographs of the outputs from each of the three groups in the participatory sessions at the first workshop.

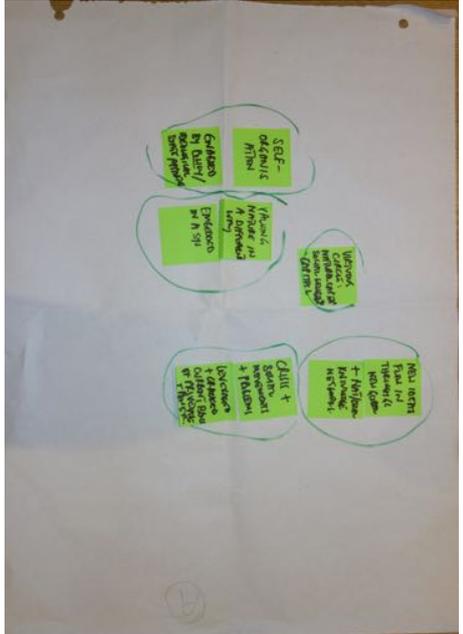
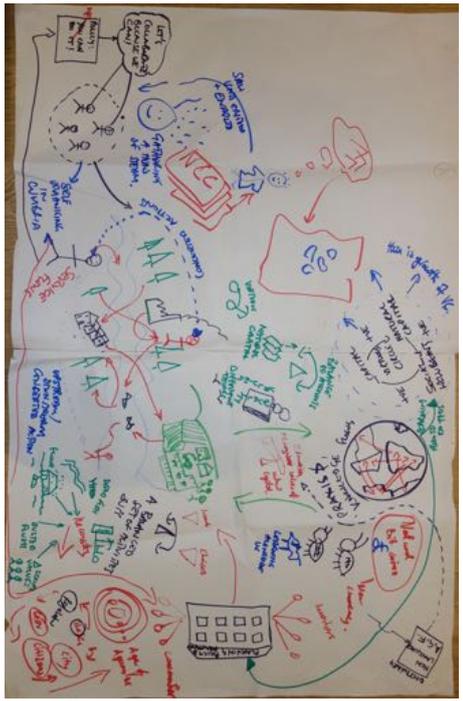
Figures B.4 to B.6 show photographs of the outputs from each of the three groups in the participatory sessions in the second workshop.





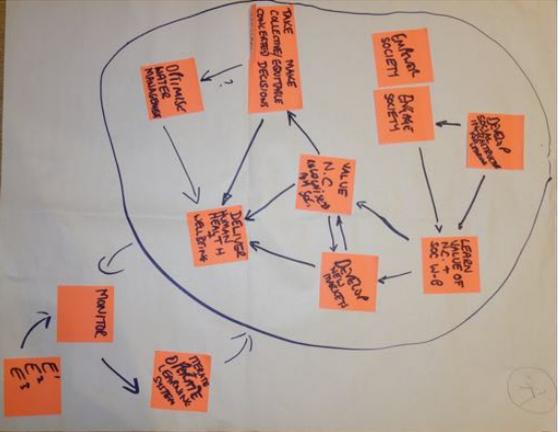


Figure B.3 Workshop 1, group 3



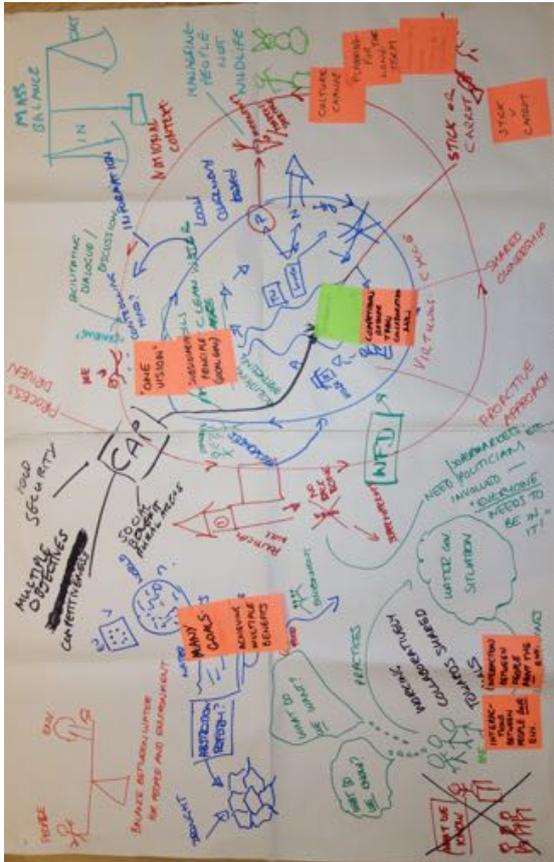
A Citizens / Industries / New technologies  
 B Data computer / Government policies / Natural environment  
 C Knowledge + services not flowing  
 D it is desirable to mix from vicinas to  
 E without circle between Govt, Economy +  
 F natural capital.  
 G (Same as B + A.)  
 H people stuck in 70s old ways  
 I (status quo)  
 J 20th Century capitalism - downward  
 K Brand regulation regime.  
 L Answer to rise + innovation + FEAR of  
 M Radical Reforming.....

A SYSTEM of GOVERNANCE TO  
 FOCUS ON COMMUNITY SELF-ORGANIZATION  
 + RESILIENT, INVESTING IN +  
 DESIGNING SOCIAL INFRASTRUCTURE  
 FOR LEARNING THE VIRTUE OF NATURAL  
 CAPITAL + SOCIAL WELL-BEING, +  
 DEVELOPING NEW MARKET MECHANISMS,  
 + CONTINUING TO EVOLVE + ADAPT +  
 VIRTUOUS CIRCLE BETWEEN QUALITY  
 OF LIFE, ECONOMIC ACTIVITY +  
 NATURAL CAPITAL.



- ACTIONS.**
1. Seek examples / stories of getting to work
  2. Map the actor network (align + out-organize) in relation to analysis by the Department of N.I.P.
  3. Develop engagement strategy for Govt.
  4. Reframe role as civic entrepreneurs (not simply civil society)
  5. Form group of cross-sectoral entrepreneurs.
  6. Tackle change strategy to audience eg. business / civil society.
  7. Present evidence to critical NGOs for them to champion their own response - lobbying.
  8. Organize and mobilize individuals.
  9. Develop learning journey to experience how values operate in market + other sectors.
  10. Influence the blockers.
    - down strategy cost + benefits.
    - Partner with LPD outdoors
  11. Facilitate learning spaces strategically.

Figure B.4 Workshop 2, group 1



2) PLACE BASED  
 3) ENGAGING REFLEXIVE ENLIST...  
 AN ITERATIVE LEARNING SYSTEM, OPERATED BY EVERYONE  
 AND OPERATED BY "SYSTEM OPERATOR" ON BEHALF OF EVERYONE  
 WITHIN A SET FRAMEWORK  
 [P] TO OPTIMIZE THE MANAGEMENT OF WATER IN ALL ITS FORMS  
 [O] BY ENGAGING AND EMPOWERING SOCIETY TO MAKE EQUITABLE  
 DECISIONS AND TAKE COLLECTIVE/CONCERNED ACTIONS  
 IN ORDER TO DELIVER HUMAN HEALTH AND WELL-BEING  
 (WHICH RECOGNIZES THAT HEALTH/ WELLBEING DEPENDS ON A  
 HEALTHY / FUNCTIONING NATURAL ENV.)  
 WITHIN THE CONSTRAINTS OF SOCIAL, ENV. + ECONOMIC SOCIETY

- B CITIZENS (PEOPLE) AND THE ENVIRONMENT UPON WHICH THEY DEPEND
  - A SOCIETY (WITH MULTIPLE SPECIFIC ROLES)
  - T<sub>(P)</sub> OPTIMIZE THE MANAGEMENT OF WATER IN ALL ITS FORMS
  - W<sub>(R)</sub> HUMAN HEALTH AND WELL-BEING
  - O EVERYONE
  - V PEOPLE WHOSE CURRENT GRANTED RIGHTS INTERESTS WILL BE ADVERSELY AFFECT BY THE 'IDEAL' GOV. SYSTEM, E.G. WATER ABSTRACTORS
  - E WITHIN THE CONSTRAINTS SOCIAL, ENV. + ECONOMIC CAPITAL
- E<sub>1</sub> EFFICACY (A) (O) ENGAGING AND EMPOWERING  
 E<sub>2</sub> EFFICIENCY (O) UNIVERSAL  
 E<sub>3</sub> EFFECTIVENESS (R) NATIONAL FEEDBACK LOCAL

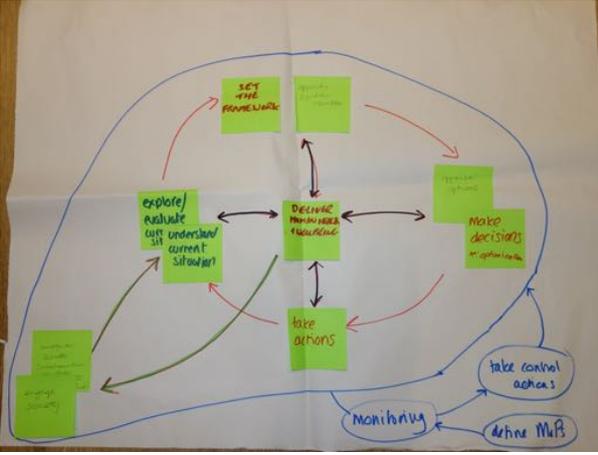


Figure B.5 Workshop 2, group 2



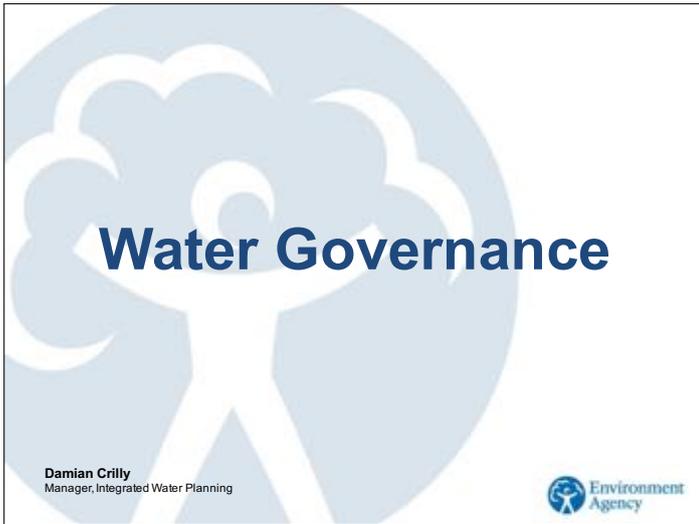
# Appendix C

## Presentation slides

[Appendices C.1 to C.5](#) are the presentation slides used by the workshop participants in the first workshop. [Appendix C.6](#) are the presentation slides used by the workshop facilitators in the first workshop.

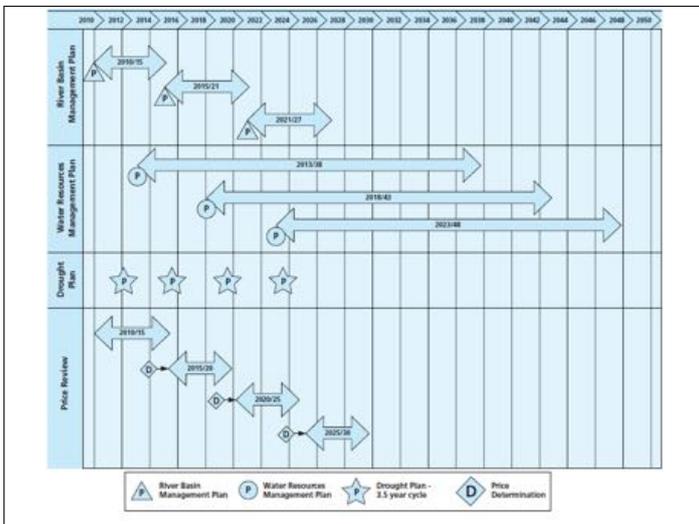
[Appendix C.7](#) are the presentation slides used by the workshop facilitators in the second workshop.

## C.1 Damian Crilly

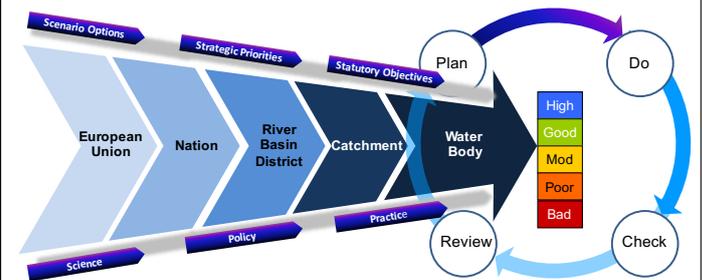


### Water Act 2014

- Water companies must supply potable water to all homes in England and Wales.
- Water companies must produce plans every 5 years showing how they will:
  - Manage the needs of future populations
  - Deal with climate change
  - Develop - where needed - new water supply resources (e.g. reservoirs)

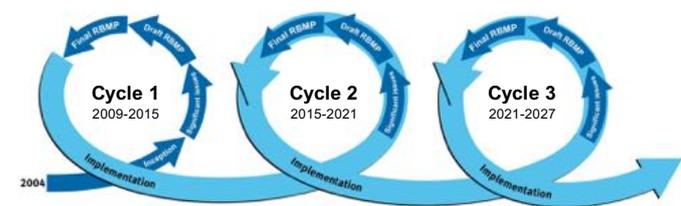


### Statutory Driver



Water Framework Directive

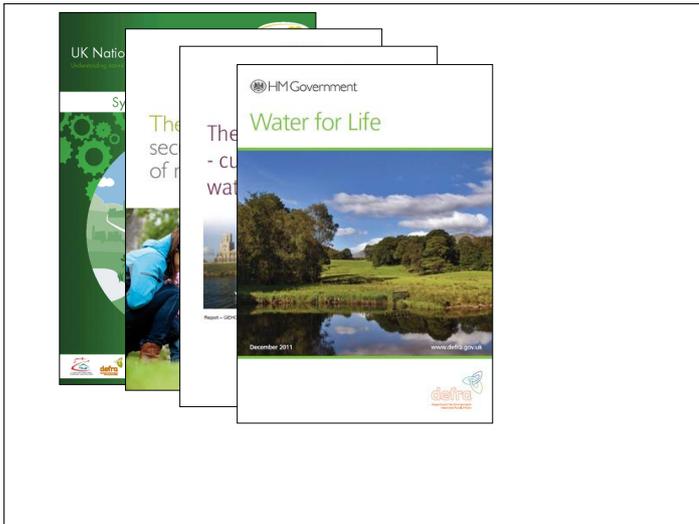
### River Basin Management



Water Framework Directive

### River Basin Districts





UK National Strategy for Water

Department for Environment, Food & Rural Affairs  
www.gov.uk/delra

Catchment Based Approach: Improving the quality of our water environment

A policy framework to encourage the wider adoption of an integrated Catchment Based Approach to improving the quality of our water environment

May 2013

Puts local communities at the heart of river basin planning

Brings stakeholders together to develop a vision for their catchment

Encourages delivery of multiple benefits and integrated environmental outcomes

UK National Strategy for Water

Department for Environment, Food & Rural Affairs  
www.gov.uk/delra

Catchment quality

A policy framework to encourage the wider adoption of an integrated Catchment Based Approach to improving the quality of our water environment

May 2013

The National Adaptation Programme

Making the country resilient to a changing climate

July 2011

Analysed the potential effects of climate change

Sets out what government, businesses, and society are doing to become more climate ready.

UK National Strategy for Water

Department for Environment, Food & Rural Affairs  
www.gov.uk/delra

Catchment quality

A policy framework to encourage the wider adoption of an integrated Catchment Based Approach to improving the quality of our water environment

May 2013

The Project

Making to a

July 2014

River basin planning guidance

"...**strategic plan** about the future of water management in river basin district.

**objectives** for each water body

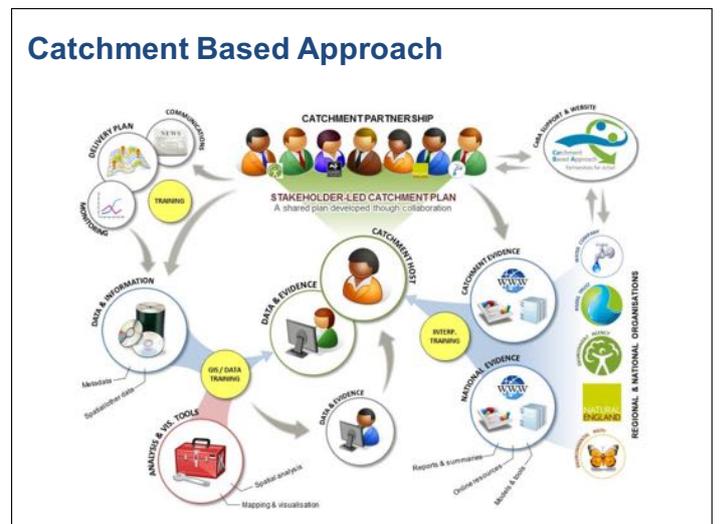
summary of the **programme of measures** necessary to reach objectives."

### Catchment Based Approach

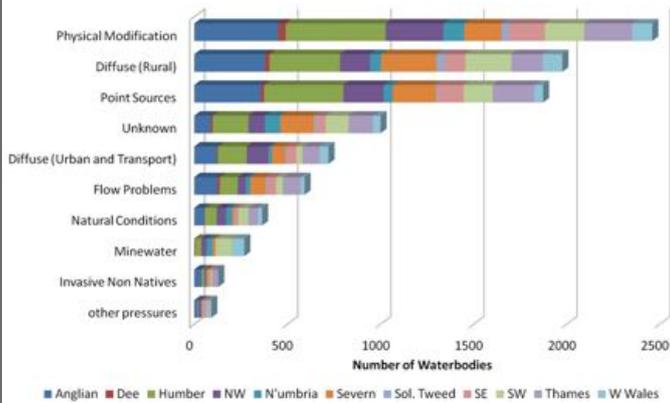
Over 100 new catchment partnerships in England

Supported by over 60 Environment Agency catchment coordinators

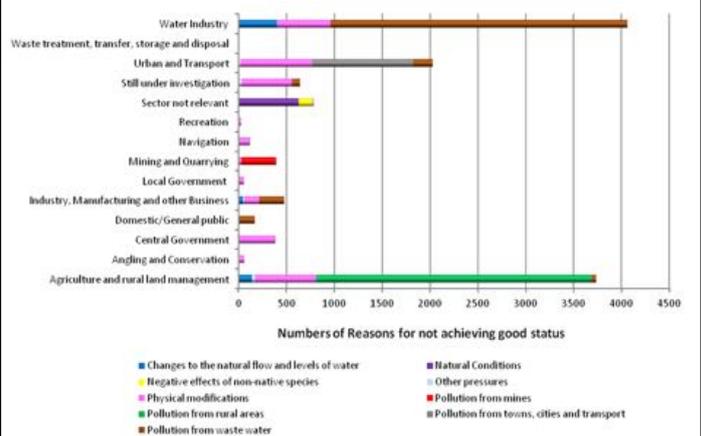
© Crown Copyright and database right 2011. Ordnance Survey licence number 100024198.



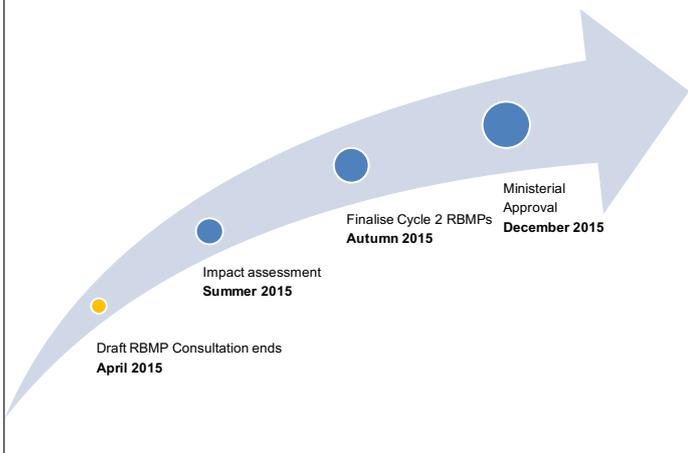
## Reasons for not achieving good status



## Reasons for not achieving good status



## Cycle 2 River Basin Management Plans



## Is there a system operator?

### Managers

- Flood risk authorities
- Landowners and land managers
- Water companies
- Regulators
- Spatial planners
- Transport authorities

### Users

- Water customers
- Anglers
- Catchment partnerships
- Shipping
- Abstractors
- Tourism and recreation
- Energy production

## Catchment System Governance

### The Basics (ABCs)?:

- **Adaptive**
  - Acknowledges complexity, time and natural variability
- **Balanced**
  - Acknowledges the often conflicting needs of multiple agents and users
- **Coordinated**
  - Acknowledges need to account for inter-dependency of actions in system

## Catchment System Governance

- What would representative catchment governance look like?
- What opportunities do upstream reform and abstraction reform create?
- Who and how should society pay for catchment infrastructure (built and natural)?



## Emerging themes 1

- ⇒ Classification
- ⇒ Use of third party data
- ⇒ Economic analysis & scenarios
- ⇒ Measures (detail and selection)

## Emerging themes 2

- ⇒ Water body delineation, mapping
- ⇒ Transitional & coastal water bodies
- ⇒ Deletion of small coastal water bodies
- ⇒ Designation of artificial & heavily modified water bodies

## Emerging themes 3

- ⇒ Protected Areas
- ⇒ Diffuse pollution
- ⇒ Polluter pays principal
- ⇒ Catchment Based Approach

## C.2 Kieran Conlan



**Open University**

**Water Governance: Policy Alignment**

*Dr Kieran Conlan*

From *policy* to *practice* www.cascadeconsulting.co.uk



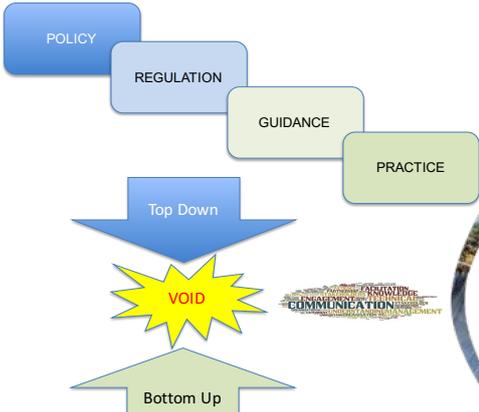
England and Wales:  
Progress – from where?

- 1928 to 1974 – many organisations
- 1989 – Privatisation
- 2011 – New Policy by Minister

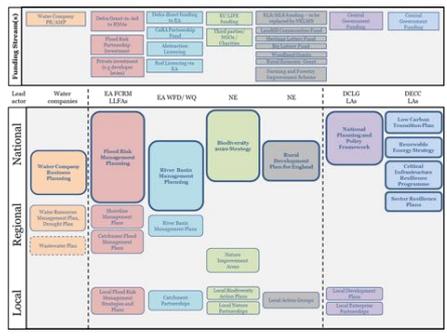
**Strategy and Centralisation**

Re-engaging with catchments & communities

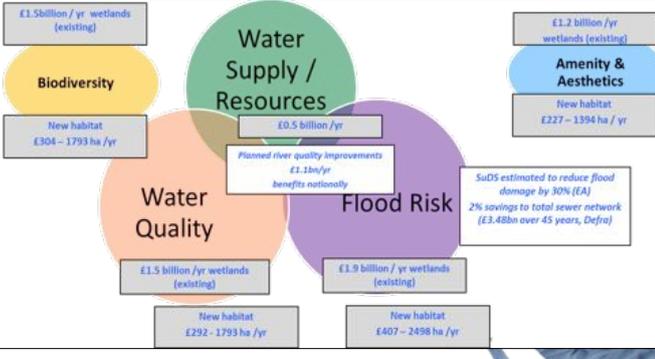
**Policy to Practice – Important?**



**Policy and Guidance in Water**

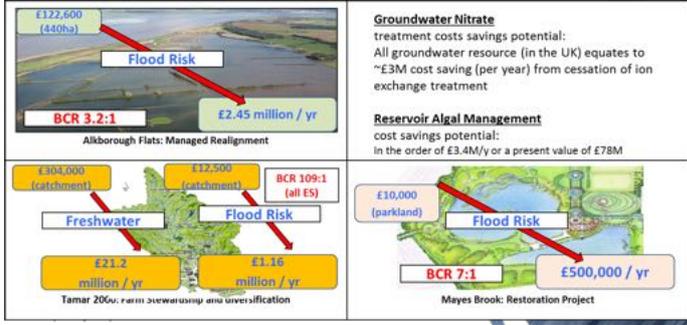


**What are the benefits?**



- Biodiversity:** £1.5 billion / yr wetlands (existing); New habitat £304 – 1793 ha / yr
- Water Supply / Resources:** £0.5 billion / yr; Planned river quality improvements £1.1bn/yr benefits nationally
- Water Quality:** £1.5 billion / yr wetlands (existing); New habitat £292 – 1793 ha / yr
- Flood Risk:** £1.9 billion / yr wetlands (existing); New habitat £407 – 2498 ha / yr; SuDS estimated to reduce flood damage by 30% (EA); 2% savings to total sewer network (£3.48bn over 45 years, Defra)
- Amenity & Aesthetics:** £1.2 billion / yr wetlands (existing); New habitat £227 – 1394 ha / yr

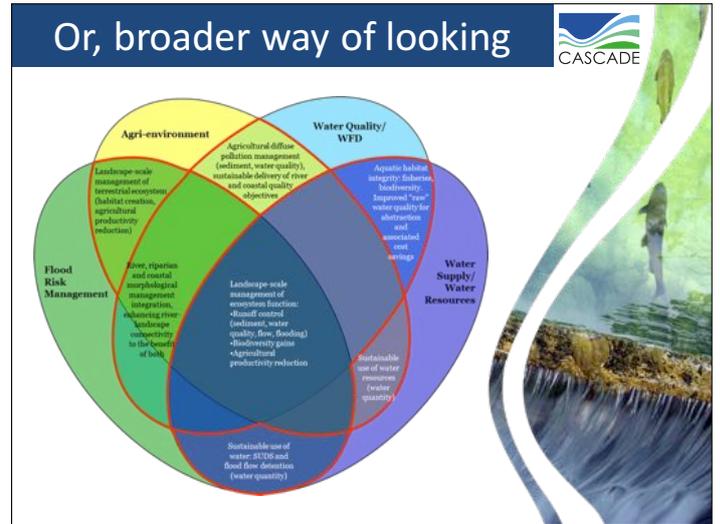
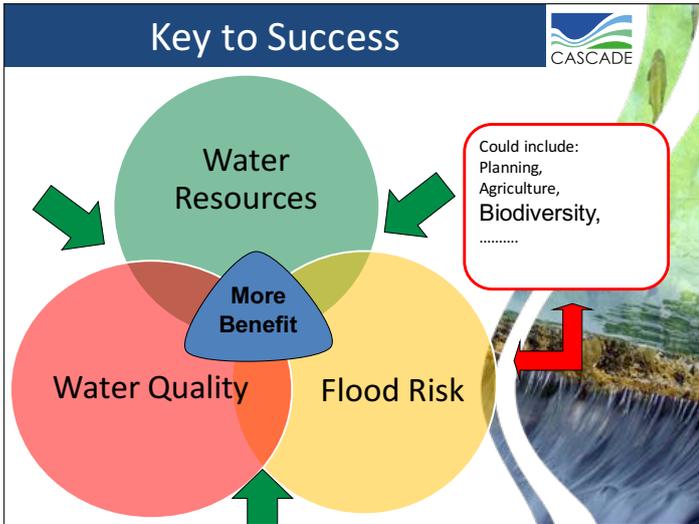
**Potential co-benefits and savings**



- Alkborough Flats: Managed Realignment:** £122,600 (440ha) Flood Risk; BCR 3.2:1; £2.45 million / yr
- Tamar 200v: farm sewerage and universalisation:** £304,000 (catchment) Freshwater; £22,500 (catchment) Flood Risk; BCR 109:1 (all ES); £21.2 million / yr; £1.16 million / yr
- Mayes Brook: Restoration Project:** £10,000 (parkland) Flood Risk; BCR 7:1; £500,000 / yr

**Groundwater Nitrate treatment costs savings potential:** All groundwater resource (in the UK) equates to ~£3M cost saving (per year) from cessation of ion exchange treatment

**Reservoir Algal Management cost savings potential:** in the order of £3.4M/yr or a present value of £78M



## Not Easy - Areas to build on

- More involvement needed from: land owners, local government and businesses
- Most feel there is no clear relationship with local fora: LNPs; NIAs; IDBs; RFCCs
- <10% indicate a good level of success with influencing other plans e.g. Local flood partnership plans; Local Authority plans; LNPs / AONBs etc

Stakeholder	Very successful	Successful	Not at all successful	Not applicable/ Don't know/ No view
Environment Agency	100%	0%	0%	0%
Environmental NGOs	100%	0%	0%	0%
Water company	100%	0%	0%	0%
Catchment Sensitive Farming	100%	0%	0%	0%
Natural England	100%	0%	0%	0%
Local authorities	100%	0%	0%	0%
Nature Improvement Areas	100%	0%	0%	0%
Landowner Organisations	100%	0%	0%	0%
Local Nature Partnership	100%	0%	0%	0%
Landowners	100%	0%	0%	0%
Internal drainage boards	100%	0%	0%	0%
Local Enterprise Partnership	100%	0%	0%	0%
Regional Flood and Coastal Committee	100%	0%	0%	0%
Businesses	100%	0%	0%	0%
Local health and wellbeing boards	100%	0%	0%	0%

## CaBA - Areas to build on

- ~ 70% are not clear of **what is expected** of them concerning funding post – 2015
- Only 27 partnerships have identified **funding** from non-Defra sources post March 2015
- Difficulty in **quantifying the benefits** of all work delivered by the partnerships

Confidence Level	Percentage
Very confident: It is one of our main focuses, we have sufficient funding in place and a business plan signed off	~10%
Confident: It is discussed frequently, we have some funding secured and a business plan has been finalised	~25%
Somewhat confident: It has been discussed, funding sources have been identified and applications are ongoing, a business plan is in the early stages of development	~45%
Unsure: It hasn't really been discussed fully, no funding is secured and activities to secure it have not taken place, little has been done to develop documents such as a business plan	~15%
Not at all confident: The future has never been discussed	~5%
Don't know/ no view	~0%

Funding Received	To deliver key priorities in your plan	To survive as a partnership
Over £100,000	~10%	~15%
£75,000 - £100,000	~10%	~15%
£50,000 - £75,000	~10%	~15%
£25,000 - £50,000	~10%	~15%
£10,000 - £25,000	~10%	~15%
£5,000 - £10,000	~10%	~15%
Less than £5,000	~10%	~15%
Don't know/ no view	~10%	~15%

## Avoiding the Void

VOID

POLICY

REGU

GUID

PRACTICE

- Continued communication of intent is key
- Champions needed at each

Human Behaviours:  
Vested interests  
Opposing views  
Politics

New ways of working to link technical and social sciences

needs to adapt to emerging circumstance

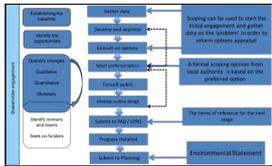
## Challenges for alignment

- Governments continue to promote aligned working through Vision and Objectives
- Alignment of planning approaches and greater influence
- Further integration of water quality, resources and floods
- Planning systems more broadly need further work:
  - biodiversity, local and regional planning, agriculture, climate....
- Value for money ...what is the scale of the benefit ?
- Move to delivery to derive greatest benefits
- Continuing to build trust
- Business planning and processes (KPIs! etc)
- Funding and investment to promote new or revised approaches, new guidance, new research

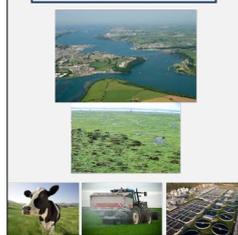
# Where next? Integrating language



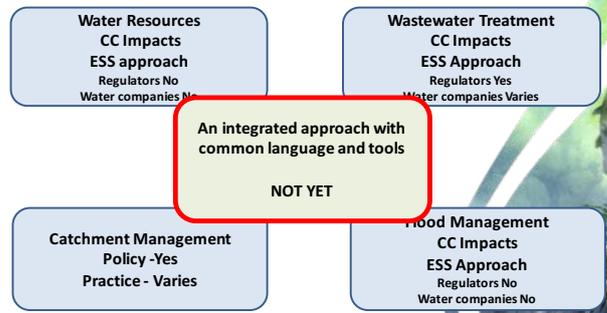
- Ecosystem services to establish better the real benefits of ecosystem approaches



Milford Haven and the Cleddau Nutrient reduction PES scheme



# Likely Outputs: Where are we now?



Business Planning Timescale	2013				2014				2015				Key Problems and Constraints (London order to Appendix 1)	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
1. Revised River Basin Management Planning														60
2. Asset Management Plan for PFI4														61
3. Water Resource Management Plan														62
4. Flood Risk Management Plan														63
<b>Key Action</b>														
1. Review the Cleddau River water resource to ensure that they will meet immediate regulatory requirements														1, 10, 24, 25, 33, 34, 35, 36, 37, 39
2. Work more closely with stakeholders, including regulators and customers														1, 68, 94(a), 7, 8, 12, 24, 32, 37, 41, 43, 44
3. Develop a strategy to protect the value of water in catchments and water users														1, 68, 94(a), 24, 29, 40, 41, 49
4. Evaluate policies to measure a water regulatory regime														4, 12, 24, 27, 37(a)(a), 39, 40
5. Early and effective consultation with stakeholders to ensure a water regulatory regime														26, 37(a)(a), 39, 40, 49
6. Encourage efficient use of water in the catchment														1, 68, 24, 54, 58(a), 60, 144, 24(a), 24(a), 27(a)
7. Ensure that water resource plans are developed in a way that is consistent with the regulatory regime														1, 68, 24(a), 11, 24(a), 39, 37(a)
8. Rationalise and integrate water resource plans to ensure consistency														1, 68(a), 24, 27, 40, 49
9. Give greater emphasis to the water company Strategic Business Plan in the water regulatory regime														37(a)(a)
10. Plan and adapt to future uncertainties that influence water resource planning														1, 68(a), 11, 24, 37(a)(a), 39
11. Develop the water regulatory regime with a focus on the water regulatory regime														7, 37(a)(a)
12. Ensure water resource plans are consistently coordinated in the water regulatory regime														26, 37(a)(a), 39, 40, 49
13. Establish an integrated assessment process that produces regulatory outcomes														1, 68, 24(a), 24(a), 37(a)(a), 39

Any questions or comments?

Contact details for survey:  
kieran.conlan@cascadeconsulting.co.uk

From policy to practice

## C.3 Paul Hammett

### Water governance – A farming perspective

Paul Hammett  
National specialist (water resources)

NFUnited  
There's strength in members.



### Farmers & growers

- Manage 75% of land
- Produce 60% of the food we consume
- Abstract 1% of total water
- Rely on rain, mains water and abstraction
- Vulnerable to too much *and* too little water
- Production risk in dry years

NFUnited  
There's strength in members.



### Horticultural production



NFUnited  
There's strength in members.



### Anglian horticultural production

Crop	% of England area in county 2012				Total % of England	Value estm 2012 £m
	Lincs	Camb	Norfolk	Suff		
Potatoes	12.4	7.8	13.3	7.5	41.0	215
Vegetables and salad (field)	24.2	12.3	10.0	7.1	53.6	470
Peas and beans (fresh)	31.3	2.3	14.3	1.9	49.8	32
Top fruit	0.2	3.3	2.6	2.2	8.3	13
Soft fruit	1.5	2.1	12.7	2.1	18.4	73
Glasshouse crops	6.0	2.3	8.0	0.7	17.0	101
HONs, outdoor flowers & bulbs	20.6	3.0	5.6	2.0	31.2	187
<b>Total Value</b>						<b>£1,092m</b>

NFUnited  
There's strength in members.



### Drought 2010-12

- Summits and the National Drought Group
- Water for food production?
- A minimum level of service for farmers?

NFUnited  
There's strength in members.



### Review of drought report Recommendations

- Fiscal opportunities for improving resilience in farming sector
- Create and develop new local water resources groups

NFUnited  
There's strength in members.



## Review of drought report Actions for the farming sector

- Licence flexibility
- Collaborative water management within the sector
- Efficiency
- Business risk planning
- Abstractor groups
- Working with non-agricultural users
- On-farm storage
- Water trading

**NFUnited**  
There's strength in members.



## NFU drought lessons learned

- Relationships
- Communications
- What could farmers/NFU do better?
- Agricultural drought plan?

**NFUnited**  
There's strength in members.



## Opportunities missed

- Soil management
- Grey water use
- Trading
- Licence flexibility

**NFUnited**  
There's strength in members.



## Water for Food group

- To identify and develop activity within the food and farming sector designed to reduce risk to drought and water scarcity focusing on resilience, collaboration, efficiency and flexible abstraction licensing
- To influence abstraction reform

**NFUnited**  
There's strength in members.



## WFF group membership

National Farmers Union  
Country Land & Business Association  
UK Irrigation Association  
Horticultural Trades Association  
British Growers Association  
Abstractor groups  
Food & Drink Federation  
Institute of Grocery Distribution  
Association of Drainage Authorities  
Central Association of Agricultural Valuers  
Anglian Water  
Potato Council (part of Agricultural & Horticultural Development Council)  
Cranfield University  
Environment Agency

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There's strength in members.



## In conclusion

- 2012 wake up call
- Next time, agriculture still exposed
- Focus on 'dry year' management
- Headroom erosion from WFD & AR
- S57 an 'hands off' conditions
- Is there a better way than individual solutions at farm level?
- Certainty v allocation – how will we cope?

**NFUnited**  
There's strength in members.



## Contact details

Paul Hammett

NFU

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**NFUnited**  
There's strength in members.



## C.4 Ray Ison

### Experimenting with Systemic Governance: some reflections from Australia and South Africa

Ray Ison

ray.ison@open.ac.uk

Professor of Systems  
Applied Systems Thinking in Practice  
(ASTIP) Group  
The Open University, UK

Systemic Governance Research Program,  
Monash Sustainability Institute, Monash  
University, Melbourne, Australia

CADWAGO Inquiry 1, London 27<sup>th</sup> April 2015

We are in a period new to human history  
– so what are the implications for what  
we do in future .....



- Governance
- Thinking
- Practice
- Institutions
- Investment

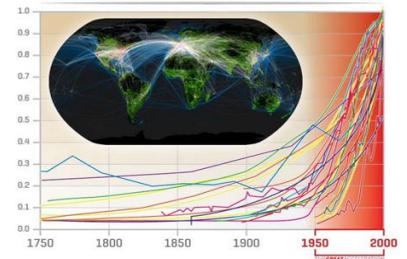
### what Towards Systemic governance



- Responding to feedback
- A cyber-systemic concept
- Cybernetics, from Greek 'kybernetes' meaning helmswoman or steersman
- Governing – responding to feedback; charting a course (purpose)
- Integrating feedback from the social and the biophysical
- The social-biophysical relationship mediated by technology – a boat – or institution – e.g. the rules of the race

### Are we in the Anthropocene?

The Anthropocene | 24 Indicators, 1 Chart

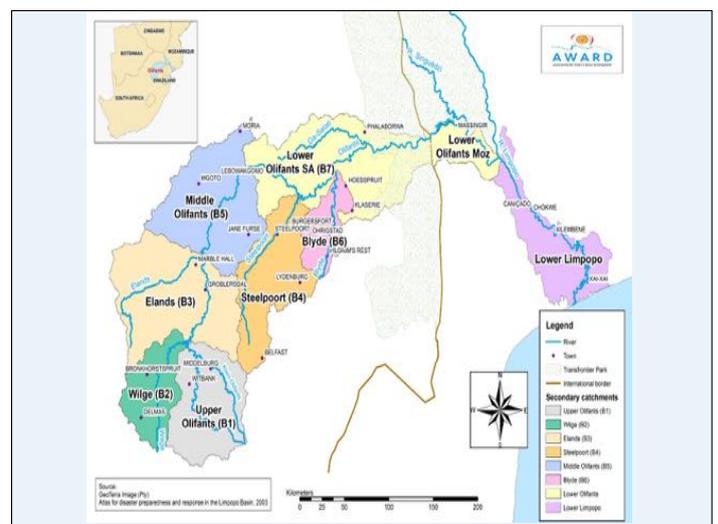


### Or is it the Anthroposilocene?

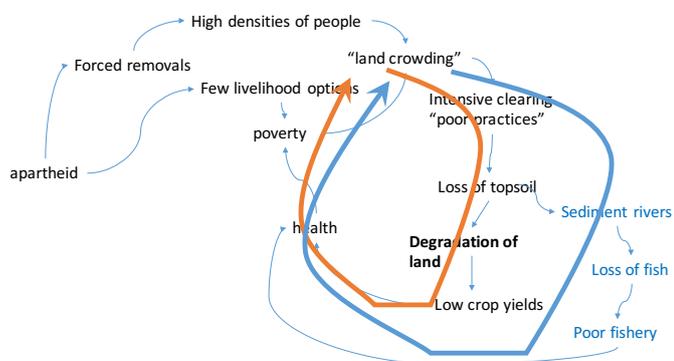
“How do we break down the silos  
and get the system working?”

## Resilim-O

<http://award.org.za/project/resilience-in-the-limpopo-basin>

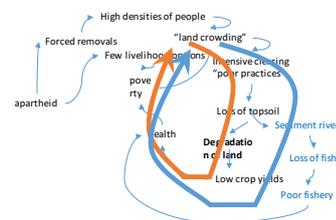


## Systemic view – structure of ‘system’



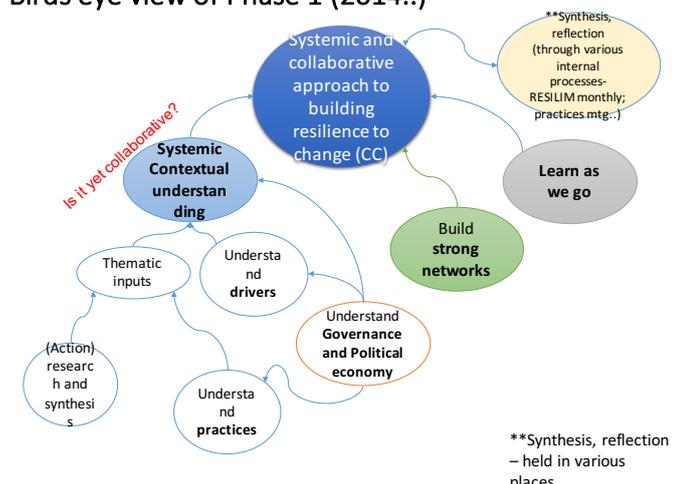
## Attributes of complex systems

- Multiple relationships
- Dynamic
- Multi-scaled influences
- Feedbacks in system



- Thus
- Largely **unpredictable**
- Requires **adaptive capacity**

## Birds eye view of Phase 1 (2014..)



## Reflexive Practice-based MERL

When we engage the world as reflective practitioners, we are committed to testing our assumptions, theories, and ideas against how the world actually works in the company of others similarly committed. When the focus of reflective practice is evaluative in nature we ask: *What's working? What's not working? How do we tell the difference?* We examine past experiences but also formulate new actions and behaviours that become experiments (innovations) for generating new understandings and fomenting change. Over time, the group produces a portfolio of learnings that documents their inquiry journey. **This process supports ongoing adaptation.**

(from Quinn Patton, drawing on the work of Donald Schön, 1983, 1987; 2011, p.270)



## Key Evaluation Research Questions

- What kind of change are we looking for? (transformation – directed change)
- What evidence are we finding for it?
- How do we think change will happen?
- What evidence are we finding for change? (narratives of change)
- What are we learning about how change happens?

## Australian ‘experiments’

(i) Transitioning to water sensitive cities

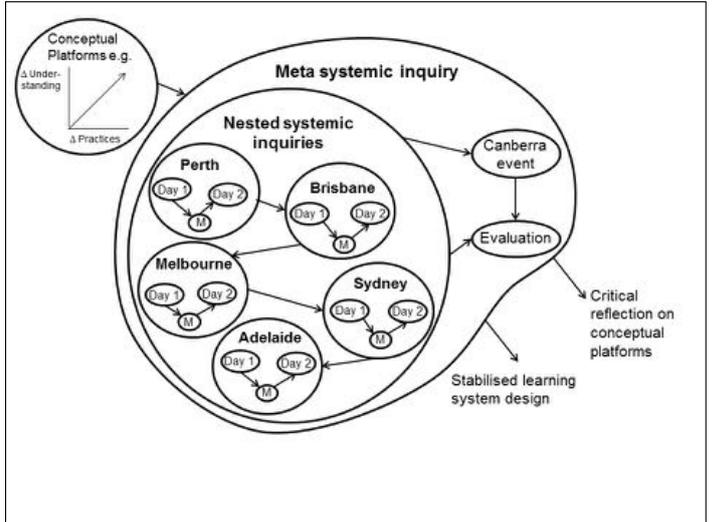
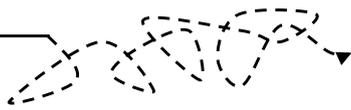
(ii) Systemic governing – the case of the Murray-Darling Basin

# Transforming situations?

Transformation as a linear process ?



Transformation as a learning process for adaptation?

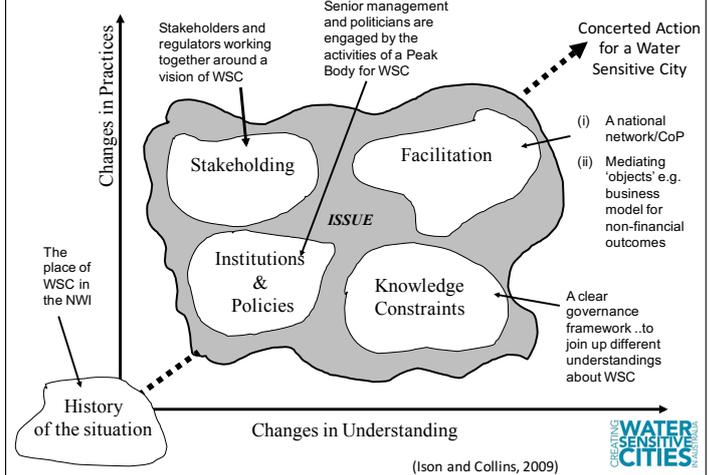


**Learning in practice...**

**System maps...**

Other likely outputs: Changes in understanding, changed social relations, changed (new) practices.

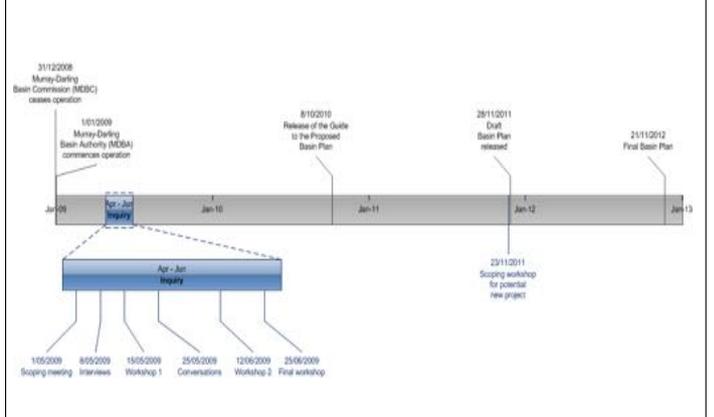
## Framework for Transforming Embedded Practices



**The Murray-Darling Basin**

- Water Act 2007 (Cwlth)
- Murray Darling Basin Authority
- Environmental Flows
- Water buybacks
- Environmental Water Holder
- Cooperative Federalism?

## A timeline of key events in the action research inquiry and the MDBA from January 2009 - December 2012



**Table 1. Examples from research and professional experience of institutional and praxis failures that undermine the governance of 'wicked' public policy situations.**

Institution examples	Implications	Source
Projects, project management and project management systems e.g. PRINCE2	In a 'projectified-world' there is increasing evidence that 'projects' deal poorly with complex, long-term phenomena	Collins et al., 2005
Local, state and federal government organisations	Administrative workloads undermine effective functioning of organisations.	Wallis and Ison, 2011
Policy bodies	Climate change adaptation is constrained	Collins and Ison, 2009
Environment Agency	Science-based approach to catchment managing privileged	Collins and Ison, 2010
A 'multidisciplinary project' within the MDB	Tensions between different epistemologies.	Ayre and Nettle, 2015
Long-term contracts with big consulting firms	Constrained intra-organisational learning and memory	Collins et al., 2005
Praxis examples	Implications	Source
Engaging with complexity	Thinking and practice methods required to understand institutional complexity	Wallis and Ison, 2011
New forms of learning required for climate change adaptation.	How to encourage and sustain citizen participation requires new skills	Collins and Ison, 2009
Managing catchments	Requires alternative learning processes	Collins and Ison, 2010
Doing integration	Managing integration in projects requires praxis skills	Ayre and Nettle, 2015
Unpacking disabling metaphors, proposing new ones	Ways of thinking and practicing are inextricably linked	Ison et al., 2011

How do we break down the silos and get the system working?

or

How do we move from silos to shared spaces?



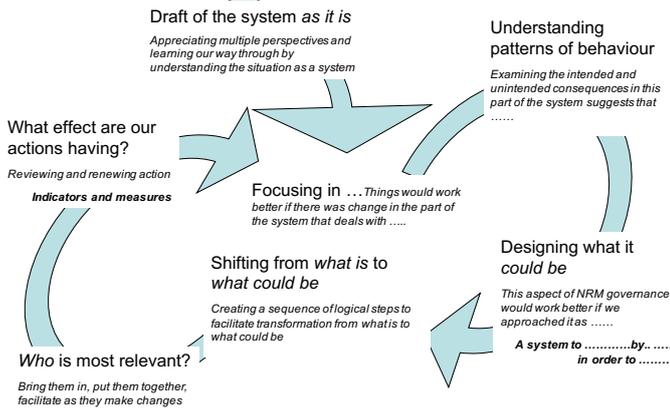
By creating and sustaining forums, like Systemic Inquiry:

- ideas & assumptions from across the governance situation can be explored, contested, improved, in trusting and respectful ways;
- we each bring our system level perspectives to solving complex problems and we in turn learn together how to work collaboratively across the system;

**Frame the inquiry**

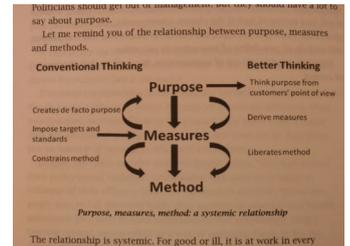
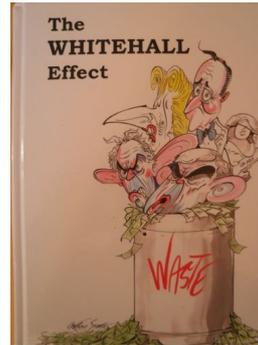
What is at issue for those with a stake in the situation?

**Process for systemic inquiry**



Created by Moragh Mackay and Ross Collier V3 2015

**We struggle in contexts in which there is pervasive systemic failure of government and too little capacity for systemic governing**



**Lynelle Briggs  
Australian Public Service  
Commissioner**

**Delivering performance and accountability – intersections with 'wicked problems'**



**APS agencies need to communicate and collaborate**

**whole of government approaches**

- High level support
  - MAC Report: *Connecting Government: Whole of Government Responses to Australia's Priority Challenges* (2004)
- effective in crisis situations
- existing systemic flexibilities, e.g.
  - joint submissions to Cabinet
  - agencies in different portfolios can agree to single outcome statement within which they establish their own outputs
  - funds can be appropriated to a central account - drawn on by different agencies

## Some systemic barriers to joined up approaches

For example, there are fundamental tensions between:

- ◆ the vertical accountabilities in the Westminster system of Cabinet Government, with its underlying accountability of individual Ministers to Parliament, where differences are ultimately resolved in the Cabinet or by the Prime Minister



AND

- ◆ the horizontal responsibilities in whole of government approaches, where differences are expected to be resolved within and between agencies

build evaluate improve grow/c



## Some systemic barriers to joined up approaches

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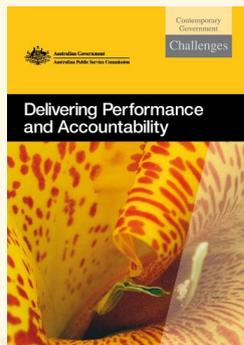
- ◆ the horizontal responsibilities in whole of government approaches, where differences are expected to be resolved within and between agencies

build evaluate improve grow/c



## We need to review our systems for performance and accountability

Released in April 2009  
in the APS Commission's  
*Contemporary Government  
Challenges* series



build evaluate improve grow/c



## New modes of policy implementation call for new capabilities

- problem framing and boundary setting
- generating fresh thinking on intractable problems
- working across organisational and disciplinary boundaries
- making effective decisions in situations characterised by high levels of uncertainty
- being able to tolerate rapid change in the way problems are defined
- Engaging stakeholders as joint decision-makers (not just providers or recipients of services)
  - Not all public servants will need to work this way all the time (some may not be affected at all) but many will be confronted by ambiguous and complex problems at some point
  - It's important for senior levels of the public service to exercise the kinds of leadership that these problems require.

build evaluate improve grow/c



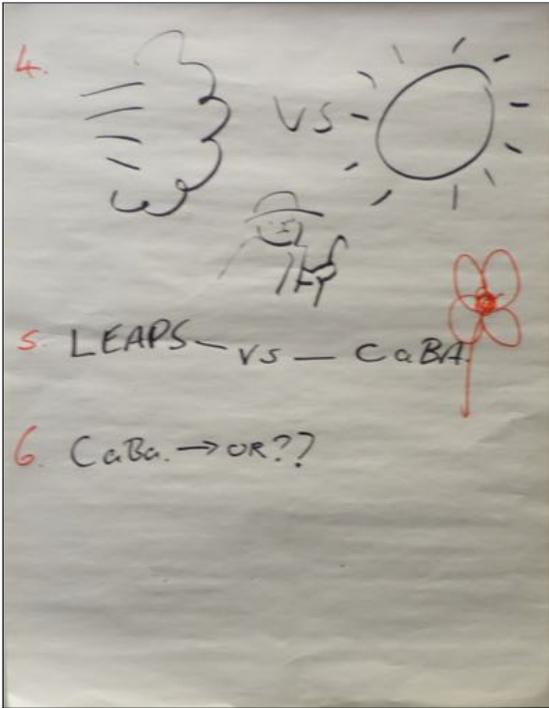
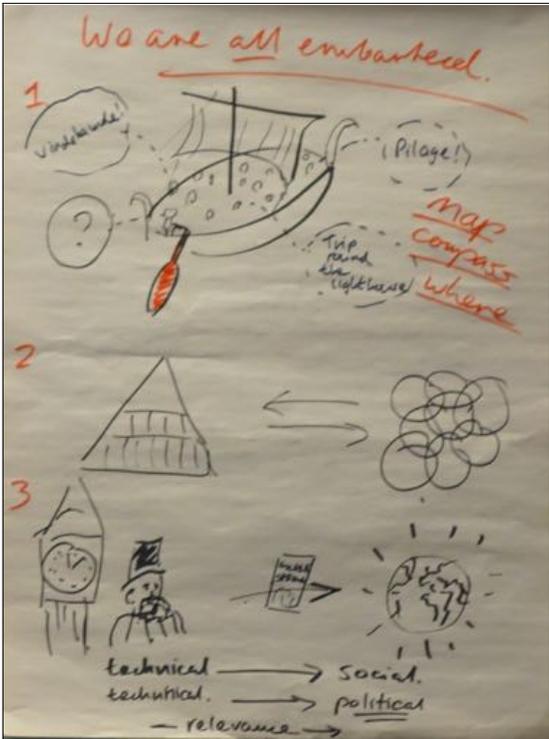
## Accountability and performance management systems need to be refined to meet future challenges

- current accountability and performance management arrangements were designed in a different era (still suitable for many of the issues dealt with by governments)
- for the future > accountability systems must be better suited to needs of a diverse, informed and networked society
- different ways of assessing performance and using performance information

build evaluate improve grow/c



C.5 Ashley Holt



## C.6 Facilitators



# Water governance in England

Improving understandings and practices through systemic co-inquiry

27<sup>th</sup> April 2015,  
Open University in London

Kevin Collins, Natalie Foster, Chris Blackmore, Ray Ison

## Housekeeping

- Fire arrangements
- Facilities
- Accessibility



## Introductions




## Agenda

- 09:30 – 09:50 Introductions and Aims
- 09:50 – 10:00 Introduction to CADWAGO
- 10:00 – 11:30 Session 1: Understanding the water governance situation  
Plenary 1: Key points and reportage situation (Coffee)
- 11:30 – 12:15 Presentations 1 + Q&A: Aspects of water governance
- 12:15 – 12:45 Session 2: Modelling water governance
- 12:45 – 13:15 Lunch
- 13:15 – 14:30 Session 2: Modelling water governance (contd)  
Plenary 2: Key points and reportage
- 14:30 – 15:15 Presentations 2 + Q&A: Challenges to water governance
- 15:15 – 15:30 Coffee
- 15:30 – 16:15 Plenary 3: Rethinking water governance
- 16:15 – 16:30 Next steps and close



## Contracting

- Co-inquiry
- Who says what stays here?
- Provide others with the experience of being listened to?
- No email, no phones in the room?
- Check out your own understandings?
- Permission to take photographs/film/record?
- Appreciate diversity of experiences and perspectives in the room?
- Finishing on time
- It's ok to ask questions / say you don't know?
- We all take responsibility for monitoring this contract



## Why Governance?

'THE WATER CRISIS IS MAINLY A GOVERNANCE CRISIS' (OECD, 2015)

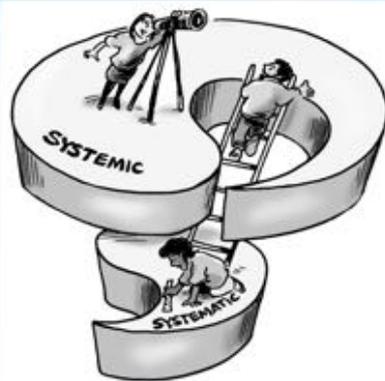
'Water demand will increase 55% by 2050 due to growing demand from manufacturing, thermal electricity generation and domestic use.

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## Why Systems?

The systemic, systematic duality



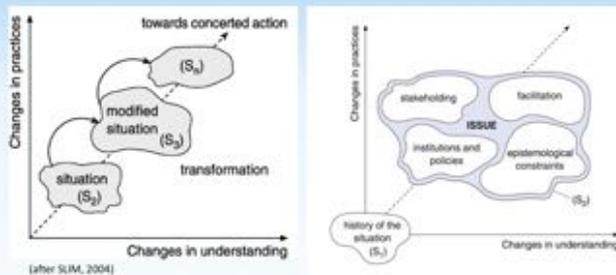
## Design of the Workshops

A Systemic co-inquiry into water governance

- Workshop 1 – Current water governance
- Workshop 2 – Future water governance



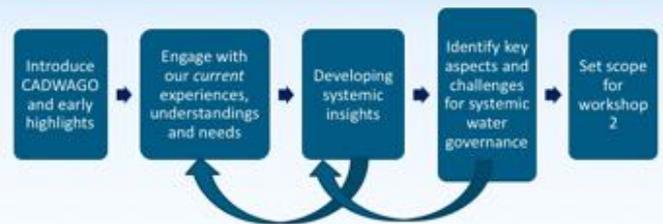
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Social learning: process of socially constructing an issue by actors in which their understandings and practices change, leading to transformation of the situation through collective / concerted action (and the building of relational capital).

## Aims of today

### Water Governance in England



## CADWAGO Aims

Address the global challenge of water security by:

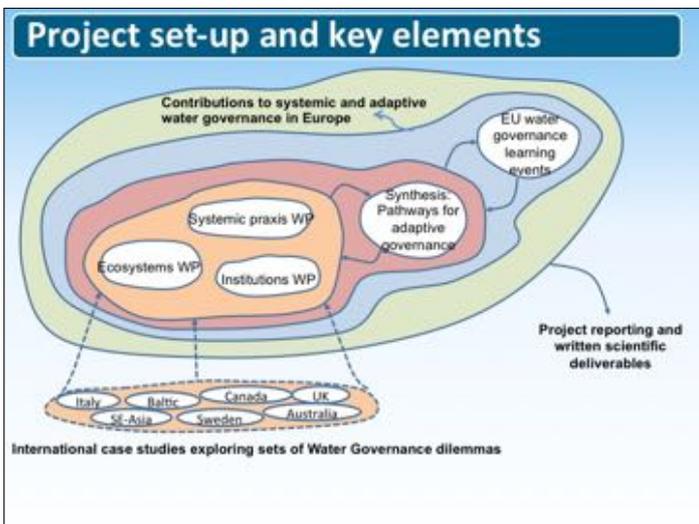
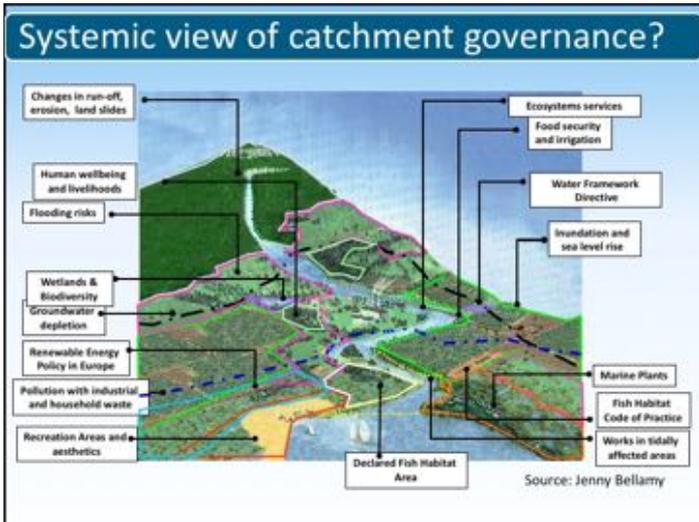
- enabling appropriate responses to the impacts of climate change on water resources.
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## Research Questions

1. What changes are needed in the existing conceptualization and framing of different modes of water governance to enable systemic and adaptive responses to climate change?
2. What are the social and institutional barriers and opportunities for adaptive and systemic responses to climate change within existing water governance regimes?
3. What practices and processes are necessary to foster systemic and adaptive responses within water governance?





- ### CADWAGO Activities
- We have contributed:**
- Inputs into consultation policy
  - Timeline of water governance
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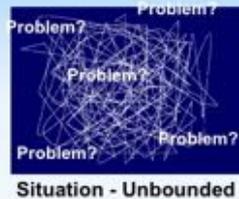
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- Co-inquiries and interventions**
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  - Collaborations with colleagues in Sweden, Canada, Italy and Australia
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### Interactive Session 1: The current water governance situation

## Problem or 'situation'?

**Problem**

Bounded



Acknowledges different perspectives

Acknowledges complexity, uncertainty, interdependencies

Acknowledges unintended consequences

Shifts from problem solving to situation improvement



## A situation....



## Exploring the situation: Rich Pictures

A way of summarising the situation from your different perspectives

Include *anything* that you think might be relevant

Pictorial element challenges linear thinking

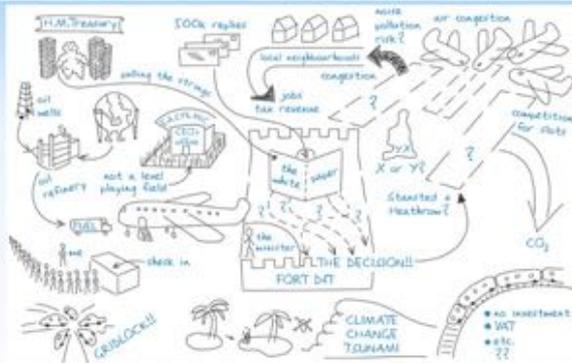


## Mr and Mrs Andrews (Gainsborough, 1750)



Not expected, desired or required

## Rich picture example



## Rich picture example



## Rich picture example



## You expect me to draw....????

Value of drawing is well recognised in problem investigation/creative thinking methods

Can both evoke and record insights into a situation

Doesn't impose a structure

Can represent experiences of complexity, uncertainty and diverse views

Can show emotions and reactions as well as things happening

Can show all insights together

Shows actors' perspectives



## As a table....

... draw a rich picture of the current water governance situation

Use a flipchart and large pens

Use pictorial symbols

Allow free thinking

Include **everything** that you think might be relevant

Avoid wordiness

Avoid overstructuring



## Rich Picture Traps

1: leaving yourself out of the picture

2: representing the problem and not the situation

3: impoverishment

4: interpretation, structure, and analysis

5: words and wordiness

6: the final version



## Identifying emerging themes

Our rich picture seems to be telling a story about....<theme>

If we could do something about <theme> then it would improve things

Identify up to 5 key themes relating to the water governance situation

Write these on post-its on your rich picture



## Plenary 1: Rich Pictures Key points and reportage





**LUNCH**



**Interactive Session 2: (continued)**



**Plenary 2: Key points and reportage**



**Presentation Session 2: Challenges to water governance**

Presentations:

- Ray Ison (OU)
- Ashley Holt (DEFRA)



**BREAK**



**Plenary 3: Rethinking water governance**



**Next steps and Close**



**Thank You**

*Questions?*

*cadwago@open.ac.uk*



## C.7 Facilitators



# Water governance in England

Improving understandings and practices through systemic co-inquiry

10<sup>th</sup> June 2015,  
Open University in London

Kevin Collins, Natalie Foster, Chris Blackmore, Ray Ison

## Housekeeping

- Fire arrangements
- Facilities
- Accessibility



## Introductions




## Agenda

- 09:30 – 09:50 Introductions and Aims
- 09:50 – 10:00 Introduction to CADWAGO
- 10:00 – 11:15 Session 1: Imaging future water governance in England  
*Plenary 1: Key points and reportage situation (Coffee)*
- 11:15 – 11:45 Presentations 1 + Q&A: Challenges for future water governance
- 11:45 – 12:45 Session 2: Modelling future water governance in England
- 12:45 – 13:15 Lunch
- 13:15 – 13:45 Plenary 2: Key points and reportage
- 13:45 – 14:15 Presentations 2 + Q&A: Opportunities for innovation water governance
- 14:15 – 15:15 Participatory session 3: Actions for future water governance
- 15:15 – 15:30 Coffee
- 15:30 – 16:15 Plenary 3: Key points and reportage
- 16:15 – 16:30 Next steps and close



## Contracting

- Co-inquiry
- Who says what stays here?
- Provide others with the experience of being listened to?
- No email, no phones in the room?
- Check out your own understandings?
- Permission to take photographs/film/record?
- Appreciate diversity of experiences and perspectives in the room?
- Finishing on time
- It's ok to ask questions / say you don't know?
- We all take responsibility for monitoring this contract



## Why Governance?

'THE WATER CRISIS IS MAINLY A GOVERNANCE CRISIS' (OECD, 2015)

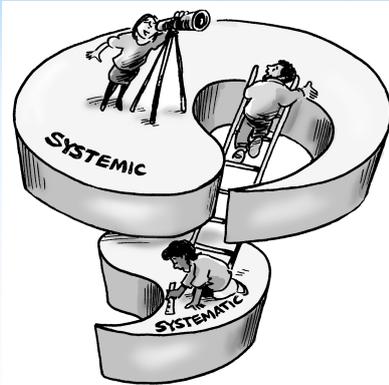
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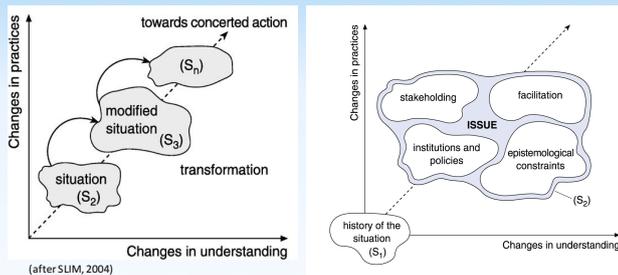
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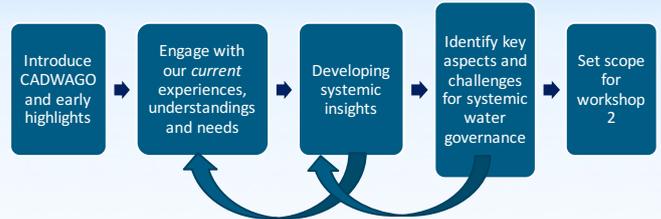
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Address the global challenge of water security by:

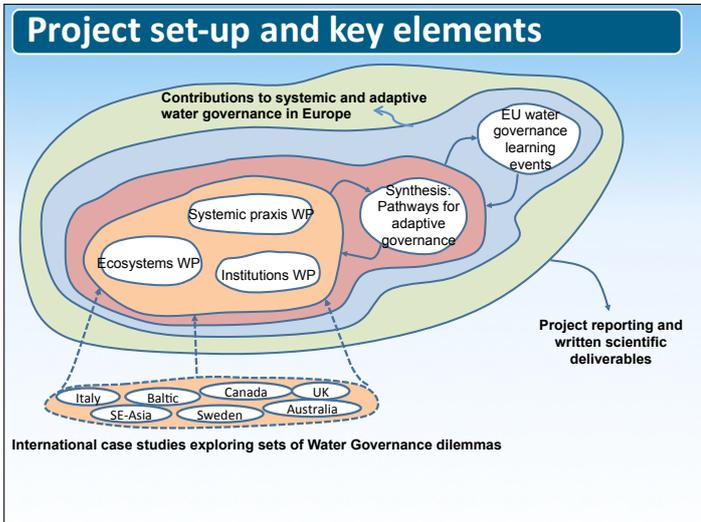
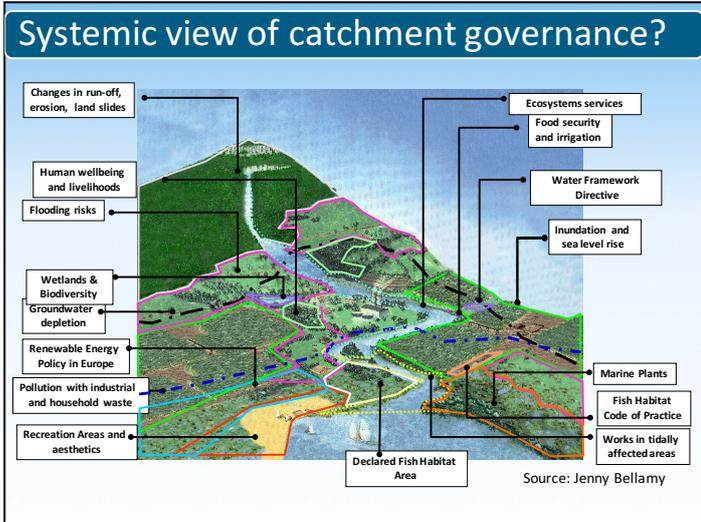
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### Activities (continued)

**Co-inquiries and interventions**

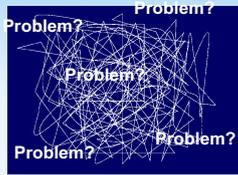
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### Interactive Session 1: Imaging future water governance

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**Problem**

**Bounded**



**Situation - Unbounded**

Acknowledges different perspectives

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Acknowledges unintended consequences

Shifts from **problem solving** to **situation improvement**



## A situation....



## Exploring the situation: Rich Pictures

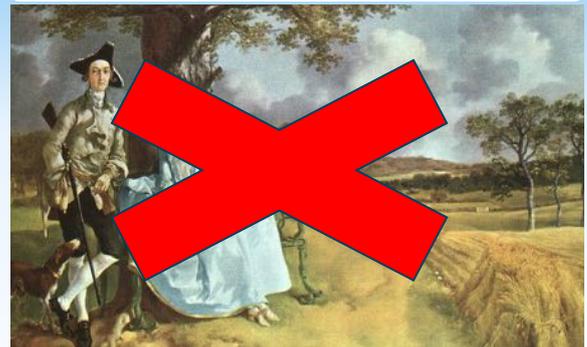
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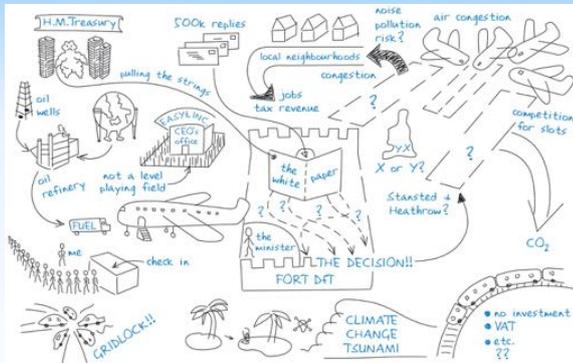


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## Plenary 1: Rich Pictures Key points and reportage



## Presentation Session 1: Challenges for future water governance

Sarah Mukherjee – Water UK  
Natalie Foster – The Open University

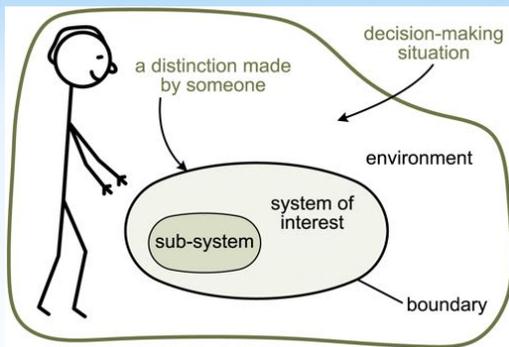


## Interactive Session 2: Modelling future water governance



32

## Systems of interest



## Clarifying Purpose: Root definition

A system.... to do P by Q  
in order to achieve R

where: P = What                      Beneficiaries  
   Actors  
   Q = How                      Transformation  
   R = Why                      Worldview  
   Owners  
   Victims  
   Environment



## A system to ...

[P] paint the house

[Q] by hand painting it in red stripes

[R] in order to retaliate against neighbours who objected to their plans to demolish it and replace it



LUNCH



## Plenary 2: Key points and reportage



## Presentation Session 2: Opportunities for innovation water governance

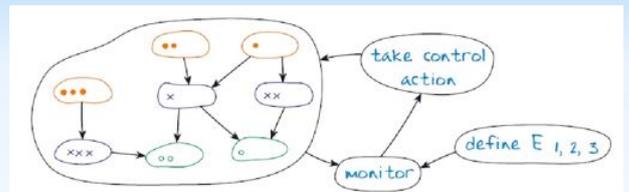
Arlin Rickard – The Rivers Trust  
Ray Ison – The Open University / CSG



## Interactive session 3: Actions for future water governance



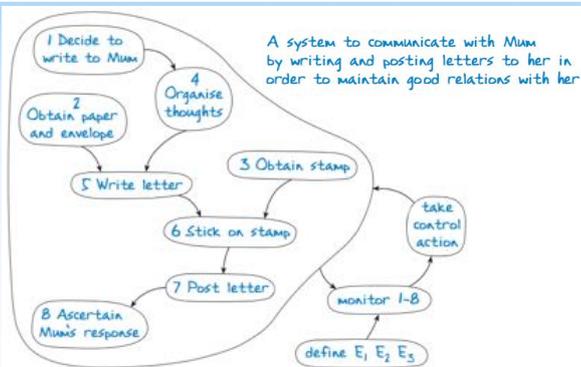
## Purposeful activity model



(The Open University, 2005)



## Purposeful activity model example



# BREAK



## Plenary 3: Key points and reportage



## Next steps and Close



Thank You

*Questions?*

*cadwago@open.ac.uk*



# Glossary

Definitions of some generalised systems concepts used in this research, adapted from: [Ison \(2010\)](#); [Open University \(2006a, 2014\)](#); [Oxford University Press \(2014\)](#); [Pearson and Ison \(1997\)](#); [Reed et al. \(2010\)](#); [Wilson \(1984\)](#).

<b>Boundary</b>	The conceptual border of a system, determined by the observer(s), which demarcates the system from its environment
<b>Difficulty</b>	A well-defined problem situation in which it is clear who is involved and what would constitute a solution within a given time frame ( <i>cf.</i> mess)
<b>Emergent properties</b>	Properties emerging from a system which are not possessed by the constituent sub-systems
<b>Environment</b>	The context for a system of interest; that which surrounds and affects the system, and is affected by it
<b>Intervention</b>	The action of intervening or interfering in any situation, so as to alter its course
<b>Measure of performance</b>	The criteria against which the system is judged to have achieved its purpose. Data collected according to measures of performance is used to monitor and control the system
<b>Mess</b>	An ill-defined problem situation in which it is not clear who is involved nor what would constitute a solution within a given time frame ( <i>cf.</i> difficulty)
<b>Method</b>	A way of doing something that is 'used as given'
<b>Methodology</b>	A way of doing something that can be adapted by the user(s); the conscious braiding of theory and practice in a given context
<b>Monitoring and control</b>	The collection and analysis of data according to measures of performance, leading to corrective actions if necessary
<b>Situation of interest</b>	A situation in which an individual or group of people has an interest (or stake)
<b>Skill</b>	The ability to do something
<b>Social learning</b>	Learning that takes place at a wider scale than individual or group learning — at societal scale — through social interaction between peers

<b>System</b>	An integrated whole in which emergent properties arise from the relationship between its parts; from the Greek <i>synhistanai</i> meaning 'to place together'
<b>System of interest</b>	A system in which an individual or group of people has an interest (or stake); the product of distinguishing a system in a given situation of interest
<b>Systemic thinking</b>	The understanding of a phenomenon within the context of a larger whole; to understand things systemically literally means to put them into a context, to establish the nature of their relationships ( <i>cf.</i> systematic thinking)
<b>Systematic thinking</b>	Thinking which is connected with parts of a whole but in a linear, step-by-step manner ( <i>cf.</i> systemic thinking)
<b>Technique</b>	A particular way of carrying out a task, effecting a purpose or facilitating an activity using a combination of skills and tools
<b>Tool</b>	Something used to assist in carrying out a task, effecting a purpose or facilitating an activity
<b>Trap</b>	A way of thinking which is inappropriate for the situation or issue being explored
<b>Worldview (or <i>Weltanschauung</i>)</b>	The view of the world which enables the observer to attribute meaning to what is observed

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The OU's strategic priorities emphasise its commitment to securing the mission, as well as to its core values of being inclusive, innovative and responsive. These priorities are:

### **Delivering an outstanding student experience**

- A market-leading enquirer experience that gets potential students efficiently and effectively onto the right course for them
- A study experience that maximises student success whilst maintaining academic standards
- World leadership in delivering journeys from informal to formal learning through open media

### **Enhancing the capabilities of the University**

- Research and scholarship that is externally recognised for excellence and impact
- People and culture that enable us to deliver high performance and respond flexibly and effectively to changes in our marketplace
- Flexible, integrated and robust systems that support the University and its students
- Enhanced financial sustainability through control of costs and greater diversification of net income

### **For further information**

✉ The Open University, Walton Hall, Milton Keynes, MK7 6AA

☎ 0300 303 5303

🌐 [www.open.ac.uk](http://www.open.ac.uk)

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