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Revisiting deliberative policy analysis through systemic co-inquiry: some experiences from the implementation of the Water Framework Directive in England

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Figure 1. Water Framework Directive implementation process (2000-2027) and deadlines by which specific actions must be taken

297x210mm (200 x 200 DPI)

Revisiting deliberative policy analysis through systemic co-inquiry: some experiences from the implementation of the Water Framework Directive in England

Introduction

Water governance is central to the crisis of the Anthropocene (Steffen et al 2018) as climate change, population growth and changing demands for water are predicted to exacerbate threats to food, water and energy security and river functioning (Defra 2011b; Jenkins et al 2009). Consequently the need for systemic and adaptive approaches to water governance is increasingly recognised (Melo Zurita et al 2018; Robins et al 2017; CADWAGO 2013; Vouvoulis et al 2017). Indeed, the European Union (EU) Water Framework Directive (WFD)¹ at its outset in 2000 was touted as a far-sighted policy that shifted focus from water quality and quantity to ecology, recognised multiple stakeholders, approached planning at the level of the whole river basin, and advocated for social learning approaches to implementation (European Commission, 2003). Seemingly, in its design and apparent intent, the WFD could be considered part of a “new system of governing” as called for by Hajer and Wagenaar (2003a, 23). It was generally welcomed as a radical improvement on earlier, piecemeal EU water legislation (Environment Agency 2002). However, as discussed in this paper, the lack of progress across the EU towards achieving its environmental objectives raises concerns about thinking and acting in relation to water governance in a changing world (Wehn et al 2018; Cabello et al 2018).

¹ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Official Journal L 327, 22/12/2000)

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3 WFD enactment experiences raise questions of what-might-have-been had deliberative
4 policy analysis (DPA; *sensu* Hajer and Wagenaar 2003b) been central to WFD design and
5 implementation. The potential for systemic failure in WFD implementation was raised in research
6 undertaken from 2001 to 2004 as part of the EU Fifth Framework, *Social learning for the*
7 *integrated management and sustainable use of water at catchment scale* (SLIM) project (see Ison
8 et al., 2004).² The outcomes of this research anticipated Wagenaar's (2011, 232) cautioning that
9 "introduction of empowered participatory governance in situations of traditional hierarchical or
10 market-based governance is fraught with pitfalls and dangers".

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22 As with Hajer and Wagenaar (2003b), the SLIM project was part of a wave of empirically-
23 grounded post-positivist studies strongly anchored in interpretivist and constructivist systems and
24 second-order cybernetic scholarship (Ison et al 2004; Ison 2017). SLIM researchers articulated a
25 mode of practice and a form of governance that constituted a duality i.e., process and/or
26 governance mechanism. Studies from 2000 have elucidated in a range of settings and cultural
27 contexts (e.g., China, Australia, South Africa, England, Scotland, Italy, France, the Netherlands,
28 Sweden) what fosters and/or constrains social learning (Colvin et al 2014; Foster et al 2016;
29 Blackmore et al 2016). The social-learning-process dimension closely resembles what Li and
30 Wagenaar (this journal) describe as "*deliberative analysts attempt[ing] to assist and mediate*
31 *between relevant policy actors [and other stakeholders], helping them to articulate their views,*
32 *deal with disputes, and develop and implement possible collaborative actions.*"

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53 ² Case studies were conducted across Europe, including, among others, analysis of the early stages
54 of WFD implementation in England, Wales and Scotland.

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3 Like DPA, research within the SLIM tradition has also generated methodological and
4 conceptual innovations as well as shifting focus towards intractable ‘institutional ecologies’ that
5 constrain social learning (e.g. Collins and Ison 2010; Ison et al 2011; Blackmore et al 2016).
6 Immersed as it has been in systems and cybernetic intellectual traditions, the concepts of feedback,
7 learning, governance (in the sense of the steering metaphor from which the term cybernetics
8 derives) and systems thinking in practice (STiP) have informed SLIM-related research inquiries.
9 Our governance and practice turn parallels the pragmatist dimension of DPA (Wagenaar and Cook
10 2003; Cook and Wagenaar 2012; Colvin et al 2014) and reflects increased commitment to a
11 ‘*progressive moral-political program.....to contribute to social, political and democratic*
12 *transformation*’ (Li and Wagenaar this journal).
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26 As the water-governance scene may not be widely known in DPA circles we begin by
27 backcasting (Paehlke 2012). The systemic co-inquiry approach reported here involved a set of key
28 stakeholders in English water governance learning their way from ‘what is’, to ‘what ought to be’
29 by generating descriptions of an English ‘water governance system of interest’ in *is* and *ought*
30 forms. The *ought* form system descriptor, agreed as an accommodation between the different
31 stakeholder perspectives, was: "*An iterative, place-based, reflexive, English learning system*
32 *operated by a ‘system operator’ on behalf of everyone and within a set framework, to optimise the*
33 *management of water in all its forms by: engaging and empowering society to make equitable*
34 *decisions and take collective/concerted actions; developing new markets for valuing natural*
35 *capital; and developing social infrastructure for knowing the value of natural capital, in order to*
36 *deliver human health and well-being (with recognition that health and well-being depends upon a*
37 *healthy, functioning natural environment) within the constraints of social, environmental and*
38 *economic capital.*" This description, as will be explained, is of an ideal system not yet found in
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3 the ‘real world’ but which could be made actionable or operable. We account for how this
4 description was reached. The challenge we set for DPA scholars/readers of this paper is how might
5 a process which brings forth such a system be made operable by contributions from DPA-informed
6 scholars/practitioners as a move towards systemic governing of coupled, co-evolving social-
7 biophysical systems?³

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15 Whilst the research presented was not performed explicitly as DPA, it has roots in the three
16 espoused pillars of DPA, namely interpretation, deliberation and practice, but seeks to go further
17 by examining the institutional affordances to DPA-as-social-learning enactment and uptake within
18 multi-stakeholder situations that span the social and biophysical (Ison 2018). It draws attention to
19 a set of practices, principles, procedures—and corresponding tools and techniques—that can be
20 employed theoretically and methodologically.

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28 The paper has four parts: 1) an overview of the WFD enactment in England; 2) the
29 implications of some of the boundary choices made by policy actors to realise different systems-
30 of-interest⁴ as they attempt WFD implementation; 3) a critical examination of how new pathways
31 and options for change, including enacting DPA, can be opened-up through a systemic co-inquiry

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41 ³ This question encompasses a preferred framing choice for rivers as coupled social and
42 biophysical systems, mutually influencing over time i.e., part of a co-evolutionary, interdependent
43 dynamic – see Ison 2018.

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48 ⁴ All systems must be formulated by someone making boundary judgements. We use system-of-
49 interest to avoid the ontological trap that arises from slippage, through every day, non-reflexive
50 use of the concept ‘system’; systems-of-interest arise from situated practice, or praxis (theory-
51 informed practical action) and are best considered as epistemological devices.

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3 approach. We conclude (4) by highlighting some of the implications for DPA, and governance in
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5 the UK/EU water sector, initiated by the WFD and a systemic co-inquiry approach.
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8 9 **Overview of the Water Framework Directive and its deliberative processes**

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13 In recognition that “water is not a commercial product like any other but, rather, a heritage which
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15 must be protected, defended and treated as such”, the WFD establishes a framework⁵ for the
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17 protection of inland surface waters, transitional waters, coastal waters and groundwater in the EU.
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19 It entered into force in December 2000 committing EU Member States to develop river basin
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21 management plans (RBMPs) and accompanying programmes of measures (PoMs) by 2009 to
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23 achieve ‘good’ water status by 2015 (with some extensions depending on circumstances).
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28 Potential DPA practices in the WFD, included planning, reviewing, consulting, studying
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30 and evaluating as well as using social learning in implementation. Despite these possibilities a
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32 text analysis of the WFD policy led Steyaert and Ollivier (2007) to argue “*that the dominant*
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34 *substantive approach of the WFD comprising particular ecological assumptions built upon*
35
36 *“compositionism,”*” was ‘*contradictory with its espoused intention of involving the public.*’
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39 Compositionism involves assembling and assessing biological elements to characterise
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41 ecological status and establishes a taxonomic structure of ecosystems based on the composition
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43 and abundance of primary species, e.g., aquatic flora, fish fauna, etc. Humans are largely excluded
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51 ⁵ ‘A directive shall be binding, as to the result to be achieved, upon each Member State to which
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53 it is addressed, but shall leave to the national authorities the choice of form and methods’ (Official
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55 Journal 2012/C 326/1 Article 288, pp.171-172).
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3 thus creating from the start an unfortunate human-nature dualism and inimical starting conditions
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5 to DPA-type implementation. This is a form of framing failure.
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8 Water, as with most domains of practice, carries a discourse often impenetrable to
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10 ‘outsiders’ who find it formal, acronym-laden and not easy to engage with or understand. Figure
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12 1 is therefore provided as an overview. The RBMPs are reviewed and updated every six years, and
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14 the WFD sets out a structured, iterative process and deadlines for specific actions (see Figure 1).
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Insert Figure 1 here

In the following account which unpacks Figure 1, the reader is invited to adopt a meta-perspective through the lens of two questions: (i) what can be said about the performativity of the WFD in England and (ii) what can be said about the water-governance-world that the practices create?⁶ These questions take inspiration from Law and Urry’s (2004) ‘enacting the social’.

Implementation of the Water Framework Directive in England

As in other EU states, implementation of the WFD in England has been challenging; consequently the story is complex and dynamic. Over time, both authority-led regulatory or ‘top down’ approaches and wider stakeholder ‘bottom-up’ responses have been evident. There is a wide range of stakeholder perspectives, ‘systems-of-interest’ and discourses ranging from the regulatory to the community-based. This section highlights the perceived landmarks and trends in the situation

⁶ One could also ask at what cost in terms of money spent as well as opportunity cost forgone.

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2
3 focused on England. Our purpose is to further elucidate what Wagenaar (2011) highlighted as “*the*
4 *formidable agenda setting power of officials and agencies*” (p. 232) when armed with a particular
5
6 *institutional design* (the WFD), a predisposing set of epistemological commitments (essentially
7
8 positivist) and inadequate historical framings for rivers which the WFD’s expanded focus on
9
10 ‘ecological status’ has done little to shift.
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14 15 16 17 ***Transposition into national legislation — 2000 to 2004*** 18

19 To bring into force the laws, regulations and administrative provisions necessary to comply with
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21 the WFD by December 2003, the Department for the Environment, Food and Rural Affairs (Defra)
22
23 and the National Assembly for Wales (Welsh Assembly) led a series of three 3-month
24
25 consultations from 2001 to 2003. These signalled Defra’s intention to implement the WFD by
26
27 means of secondary legislation and set out the draft Regulations and an accompanying partial
28
29 Regulatory Impact Assessment (RIA; Defra 2002, 2003; DETR 2001). The Regulations to
30
31 transpose the WFD for the UK’s river basin districts⁷ came into force in 2004.
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35 Within each of the nine English and Welsh and one Scottish river basin districts (RBDs)
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37 general responsibility for the WFD is placed on the ‘appropriate authority’ whilst responsibility
38
39 for producing and updating the RBMPs is placed on the ‘appropriate agency’. In England these
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41 roles are respectively undertaken by the Secretary of State and the Environment Agency. The
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43 Regulations also define the RBD boundaries, which correspond with the Environment Agency’s
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45 regional operating areas, originating from the privatisation of the water industry in 1989 and the
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47 establishment of the National Rivers Authority (now the Environment Agency) (Watson 2014). In
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3 other words transposing the WFD exacerbated institutional complexity (Wallis and Ison 2011) but
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5 offered no institutions likely to promote new practices other than compliance. Enactment was
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7 consultation rich but participation and deliberation poor. Almost no localised self-organizing
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9 potential was enabled; this carried consequences (Collins and Ison 2009a).
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15 ***First planning cycle — 2004 to 2009 — Regulatory, ‘top-down’ river basin management***

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19 *Characterisation, impacts, economic analysis, protected areas and monitoring*
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24 The Environment Agency led a preliminary consultation in 2002 on guiding principles for the
25
26 implementation of the associated technical issues, giving proposals on how the water environment
27
28 would be assessed, classified and monitored (Environment Agency 2002). Subsequently, for each
29
30 RBD, the Environment Agency carried out an analysis of characteristics and a review of the impact
31
32 of human activity on the water status and was required to design and make operational programmes
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34 of monitoring to establish a consistent, coherent and comprehensive overview of the water status
35
36 within each RBD. The monitoring programmes were reported via WISE (Water Information
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38 System for Europe) to the European Commission in March 2007. All these tasks were underpinned
39
40 by the work of the UK Technical Advisory Group (UKTAG), established in 2001 to produce
41
42 guidance papers to support consistent UK implementation of the WFD (UKTAG 2011c).
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47 In 2004, Defra commissioned three studies on economic importance of RBDs, cost
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49 recovery and assessing disproportionate costs (see EASG 2004). Defra then led a consultation on
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51 the WFD’s requirements for economic analysis in, in parallel with the Environment Agency’s
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53 consultation on the results of their characterisation analysis. Drafts of the supporting documents
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3 required by the WFD were then developed in close collaboration with the Economic Advisory
4 Stakeholder Group. Final summary reports were published in March 2005 for each RBD, and
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6 submitted to the EC (Defra 2008b).
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10 11 12 *Environmental objectives and programmes of measures* 13

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17 Taking into account the characterisation, impact assessment and economic analysis of water use,
18 the Environment Agency was required to prepare and consult on proposals for environmental
19 objectives and programmes of measures (PoMs) to to achieve them. These objectives translate
20 generic environmental objectives to the particular situation in each RBD. As with the previous
21 technical analysis, this process was underpinned by UKTAG's guidance. In 2003, UKTAG
22 initiated the development of methodologies for assessing the condition of biological quality
23 elements for rivers, lakes, transitional waters and coastal waters (UKTAG 2011b). In 2004, they
24 also initiated a phased approach to the development of environmental standards and conditions for
25 non-biological quality elements as well as for groundwater quantity and chemical quality elements.
26 Following stakeholder reviews (consultations) between February 2006 and August 2007, UKTAG
27 published its recommendations (UKTAG 2011a). These recommendations were formally adopted
28 following a further public consultation led by Defra (Defra 2008a). The Environment Agency's
29 proposals for environmental objectives and PoMs were published for public consultation in the
30 draft RBMPs for each RBD..
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52 *River Basin Management Plans* 53 54 55 56 57 58 59 60

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3 The Environment Agency was required to prepare and publish RBMPs for each river basin district
4 by 22 December 2009. The Environment Agency led a consultation in early 2005 on a strategy for
5 river basin planning, setting out their proposed approach for developing the RBMPs, stakeholder
6 engagement, and how they would integrate different aspects of managing the water environment
7 (Environment Agency 2005). Further consultations (December 2006 - June 2009) set out: a
8 timetable and work programme for the production of the plan, including participation in the
9 process; an interim overview of the significant water management issues; and the draft RBMPs
10 (EC 2009). These plans coalesced the results of the prior technical and economic analyses, along
11 with the proposed environmental objectives and programmes of measures. Approval by Defra, of
12 the final RBMPs for the first planning cycle was required (Defra 2009).
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26 WFD implementation in England up to 2009 involved some deliberation in specialist
27 technical groups; some wider perspectives were sought through commissioned consultancies and
28 formal public consultations. Thus far, WFD implementation exemplified what Hajer and
29 Wagenaar (2003a, 6) describe as “an attitude towards knowledge”. There was little in the way of
30 practice that could be said to be post-positivist (i.e., interpretivist) except for studies such as our
31 own that sought to introduce social learning but focused internally on the understandings and
32 practices of mainly Environment Agency staff (Collins et al 2005).
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45 ***Second planning cycle — 2009 to 2015 — Introducing a ‘bottom-up’ catchment approach***

46 47 48 49 *Legal challenge and the Catchment-based Approach (CaBA)* 50 51 52 53 54 55 56 57 58 59 60

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3 Despite much regulatory, technical and administrative activity and analysis in the first cycle,
4 improvements in water quality were limited and some hard decisions were avoided by lodging
5 numerous derogations argued on the grounds of expense. The WFD was conceived as a basin-
6 level directive, but in the UK, owing to geographic scale, this boundary (interpreted as an amalgam
7 of multiple river catchments) and remit did not resonate with most communities and existing
8 organisations working with rivers at catchment or sub-catchment/reach level. The WFD, enacted
9 at river basin scale, thereby offered limited scope for buy-in, traction and community-based
10 contributions. In short, a top-down, expert-led WFD, as conceived and enacted by regulators and
11 agencies, was not achieving its objectives. In March 2010, the NGOs WWF-UK and the Angling
12 Trust initiated legal proceedings against Defra by applying for a judicial review of the 2009
13 RBMPs. They challenged the legality of the plans because “*they do not set specific targets or a*
14 *coherent timeframe to address the poor ecological status of many rivers and lakes in England*
15 *[and] rely heavily on a wide range of reasons for inaction which the Directive only allows to be*
16 *used in exceptional circumstances*” (Angling Trust 2010). After extensive talks, the challenge was
17 settled before reaching court (March 2011) with the publication of a position statement by Defra.
18 This set out principles for river basin planning guidance, and the future direction for implementing
19 the WFD. Significantly, Defra committed to undertake more actions at catchment level, and
20 announced a pilot phase to test the longer term viability of a ‘catchment-based approach’ (CaBA).

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The threat of judicial review brought into the open from within Defra and the Environment Agency what till then was a subjugated discourse coalition (Hajer 1997) based on a river catchment approach. The espoused rationale of CaBA was to do ‘adaptive management’ at catchment levels which required more transparent decision-making, environmental focus and enabling wider engagement and collaborative ways of working. The government would not be providing the detail

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3 – this had to evolve from practice – guided by the network of practitioners.⁸ The emergence of
4 the CaBA could be seen, in part, as a legacy of earlier work arising from the EU-funded SLIM
5 project, in which insights for WFD implementation were introduced within the Environment
6 Agency through a series of action-research engagements over the period 2005-8 (see Collins et al
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The subsequent pilot phase of the CaBA comprised pilot projects in 10 catchments hosted by the Environment Agency (Defra, 2011a), and a further 15 pilots hosted by other organisations including rivers trusts, regeneration organisations, national park authorities, water companies and wildlife trusts (Cascade Consulting 2013). The pilot phase concluded in March 2013, and subsequently Defra published a policy framework to encourage the wider adoption of the CaBA (Defra 2013). It was anticipated that CaBA would *contribute* to the implementation of the WFD rather than *replace* the existing process, although it was not made clear how they would be effectively linked in practice (Watson 2014).

River Basin Management Plans 2

In parallel with the pilot phase of the CaBA, the Environment Agency commenced the formal process of reviewing and updating the RBMPs. As previously, they led a series of three 6-month consultations (Environment Agency 2013). The draft plans set out the updated characterisation, impacts assessment and economic analysis along with revised proposals for environmental objectives and PoMs for each RBD. In support of the technical work, UKTAG published revised

⁸ Notes taken from London Start-Up Conference for the CaBA, 5th November 2013.

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3 environmental standards and conditions following a 3-month stakeholder review in 2012 (UKTAG
4 2013). These standards and conditions were formally adopted in 2015 (Environment Agency
5 2015).⁹ Following approval by Defra, the RBMPs for the second planning cycle were published in
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8 February 2016 (Defra 2015).
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17 ***Third planning cycle — 2015 to 2021 — Reconciling WFD and CaBA?***

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22 In practice, EU Member States have found WFD implementation challenging. The European
23 Commission's (EC) assessment of the RBMPs predicted that while progress was expected, a
24 significant proportion of water bodies would not reach good status in 2015 (European Commission
25 2012, 6). Furthermore, that “the approach taken by many Member States — of “moving in the
26 right direction” based (largely) on business-as-usual scenarios — is clearly not sufficient to
27 achieve the environmental objectives for most water bodies” (European Commission, 2015a, 18).
28
29 In the UK, although more than 98 percent of the measures summarised in the 2009 RBMPs were
30 completed by 2015, there was about a 4 percent *decrease* in overall water status during this time
31 period (Environment Agency 2015). Furthermore, an implementation ‘gap’ remained between the
32 historical, regulatory, top-down river basin management approach led by Defra, and the espoused
33 bottom-up CaBA led by the 100+ catchment partnerships across England (Foster et al. 2016;
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35 Watson 2014). Despite some notable advances in establishing the CaBA and its early achievements,
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52 ⁹ The Water Framework Directive (Standards and Classification) Directions (England and Wales)
53 2015, which revoked the 2009 Directions and 2010 Directions with effect from 22 December 2015.
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3 in 2018 it remained unclear how the implementation gap will be resolved during the third planning
4 cycle. This uncertainty sits alongside an EU-wide ‘fitness check’ of EU water legislation that is
5 considering whether the existing regulatory framework is fit for purpose. The WFD is being
6 evaluated alongside Directives on Groundwater (2006/118/EC) and Quality Standards
7 (2008/105/EC) and the Floods Directive (2007/60/EC).
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14 15 **Breaking away from ‘business-as-usual’ – Reflections on the implications of boundary** 16 **choices?** 17 18 19

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22 The emergence of CaBA created a set of competing boundary claims as to the primary governance
23 system for England’s waterways. A boundary choice can be understood as synonymous with a
24 framing choice: “since frames come in systems, a single word typically activates not only its
25 defining frame, but also much of the system its defining frame is in” (Lakoff 2010, 71-2). The
26 implications of the boundary choices that have been made by those involved in the process of
27 implementing the WFD and CaBA and evidence of systemic failings and/or tensions are drawn
28 out.
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41 *Administrative and operational boundary choices — maintaining ‘business as usual’*

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46 The adoption of the WFD offered the opportunity to fundamentally transform water governance
47 in England (EFRAC, 2003). But, in deciding to use secondary legislation to implement the WFD
48 and to appoint the Environment Agency as the sole competent authority responsible for producing
49 the RBMPs in England, Defra reduced options so that a ‘business as usual’ approach was almost
50 inevitable. This has been subject to intense debate and criticism, particularly regarding roles and
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3 responsibilities, and the scale and urgency of the task (e.g. Cook et al 2012; Mostert et al 2007;
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5 Orr et al 2006; Watson 2014; Whaley and Weatherhead 2016).
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8 Constructive critiques were provided early during implementation. For example, an inquiry
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10 by the Environment Food and Rural Affairs Committee (2003) questioned Defra's intention to
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12 appoint the Environment Agency as the sole competent authority under the WFD. The RSPB¹⁰
13
14 opposed this option whilst British Waterways welcomed the choice but raised concerns regarding
15
16 conflicts of interest between regulation of navigation and flood defence. Some witnesses also
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18 raised concerns regarding a perceived lack of resources and democratic mandate within the
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20 Environment Agency to enable it to fulfil the requirements of the competent authority. The
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22 Countryside Council for Wales and English Nature argued to be given competent authority status
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24 in relation to specific parts of the WFD (a form of co-delivery). The optimistic statements made
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26 by Defra and the Environment Agency about the state of water bodies in England led some
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28 witnesses to perceive this as complacency about the scale of the task.
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33 Outcome and implementation concerns were upheld by those jointly seeking a judicial
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35 review of the 2009 RBMPs. The introduction of CaBA as a response offered a second opportunity
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37 for transformation in water governance in England. This innovation also added further institutional
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39 complexity in that the boundary relations between CaBA and the WFD were never fully resolved.
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41 As our account shows the WFD is demanding in its institutional configuration and requirements,
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43 relies heavily on consultation (rather than participation, deliberation or social learning) and is
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45 vulnerable to praxis abuse (just as a good orchestra is more than the sum of its players, score and
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55 ¹⁰ Royal Society for the Protection of Birds, England's largest environmental NGO.
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3 instruments).¹¹ The emergence of CaBA in parallel with the existing WFD processes meant
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5 changes to the water management regime whilst governance, based on more fundamental
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7 structures and power relations which determine how decisions are made and enacted and in whose
8
9 interests, had not changed at all (Watson 2014).
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12 Despite the initial intentions of the CaBA, the pursuit of a systemic participatory,
13
14 deliberative, social-learning enactment of water governance was never mainstreamed into the
15
16 WFD specifically by Defra or the Environment Agency. With the emergence of CaBA and the
17
18 ongoing needs of the WFD, the challenge facing the water governance community-of-interest was
19
20 to break out of the trap of business-as-usual practices that were mainly top-down and/or centre-to-
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22 periphery modes of action. Praxis innovation, capable of institutionalisation, was needed to
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24 accompany the CaBA reform and deliver the improvements in water status required by the WFD.
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31 *Systemic co-inquiry — Opening up new pathways and options for change*

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35 Meeting the overall purpose of the WFD in England is still not guaranteed despite engaging many
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37 people for more than 15 years. There have been elements of what Curato et al (2017) refer to as
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39 deliberative democracy with, for example, many sorts of communication, agreements on some
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41 courses of action, nuanced views of power and some plural rather than consensual processes of
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43 decision making. But engagement and consultation has not necessarily meant harmonised
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45 participation and deliberation i.e., deliberative governance. The CaBA continues to evolve in
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53 ¹¹ For examples of praxis abuse/innovation see Collins and Ison's (2010) account of working with
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55 EA scientists to build a praxis for integrated catchment science.
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3 parallel with the existing process for implementing the WFD, and alongside other significant
4 reforms to the water sector brought about by the enactment of the Water Act 2014, including
5 putting in place measures to reform water use licensing from rivers and groundwaters, the
6 introduction of competition in the retail market, and provision for water trading by creating a cross-
7 border market in water between England, Wales and Scotland (HMSO 2014). Each of the changes
8 is a response to the specific challenges that fall within the realm of improving water governance
9 but together they constitute a melange of rationalities and competing epistemologies. Thus, they
10 raise many questions: How will the changes play out in practice? Will they work together to form
11 a coherent ‘whole’? Can collaborative, regulatory and competitive approaches really co-exist?
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24 In this context, researchers from the Open University (OU) engaged in a systemic co-
25 inquiry with Government bodies, NGOs, consultants, water industry personnel, academics, and
26 others to collectively develop a better understanding of the current water governance situation, and
27 how it could be improved in practice (Foster et al 2016).¹² Collaboration between OU researchers
28 and the Environment Agency had begun in late 2003 when the Environment Agency signed a
29 partnership agreement with the OU’s SLIM team to investigate social learning approaches (Colvin
30 et al 2014). The Environment Agency’s interest in the use of social learning approaches derived
31 from the European Common Implementation Strategy Guidance (EU 2003) which made reference
32 to the importance of social learning for implementing the WFD. Unlike those in the Environment
33 Agency’s WFD team, the OU team chose a frame of the ‘WFD-as-contested’ as a starting point;
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50 ¹² Foster et al 2016 provide a full account of the design, methods, participants and evaluation of
51 the activities described here; our purpose is not to describe our deliberative (or systemic) praxis
52 but to situate what we have done in the unfolding exigencies of English water governance.
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3 in other words the situation was framed as a ‘wicked problem’ (Rittel and Webber 1973; Ison et
4 al 2004) or what some now call a VUCA (Volatile, Uncertain, Complex and Ambiguous) situation
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6 (Johansen 2007). Within the Environment Agency, WFD implementation was understood more as
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8 a technical requirement within normal management parameters i.e., a tame problem in Rittel and
9
10 Webber’s (1973) terms.
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15 This new phase of inquiry grew out of long-term relationship-maintaining between
16 Environment Agency and OU staff and a move within parts of the Environment Agency to invest
17 CaBA with more systems thinking in practice capability. With the backing of Defra (2) and EA
18 (2) staff responsible for CaBA, two collaborative events with national and regional policy-makers
19 and practitioners were undertaken as a part of the systemic co-inquiry, which focused on the
20 current (is) and future (ought) water governance situation in England respectively. Foster et al
21 (2016) describe these collaborative events in detail, and hence, only a summary of the key points
22 is provided here to demonstrate the main processes and outcomes relevant to the challenge we
23 posed earlier about DPA.
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35 Co-operative (or collaborative) inquiry, proposed by John Heron in 1971, and subsequently
36 developed with Peter Reason, involves researching with (rather than on) people. Thus, participants
37 are able to be involved as co-researchers, and may contribute to the design, implementation,
38 monitoring and evaluation of the research (Heron and Reason 2001). Systemic co-inquiry is a
39 specific type of co-inquiry which draws on systems theories, methodologies and techniques
40 (Blackmore 2009; Checkland 2002; Dewey 1933; Ison 2017; Churchman 1971). It is a mode of
41 investigation that is open to changing situations, pursuing new directions, and engaging with new
42 or different theoretical/methodological frameworks. It is also an institutional form that can be built
43 into governance arrangements. Systemic inquiry begins with acknowledging uncertainty (not-
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3 knowing) and focuses on processes of social learning and the emergence of opportunities, rather
4 than on pre-defined timelines, blueprints and outputs common to projects and programs (Ison 2002;
5 Ison et al 2004; Wallis 2015).
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10 Each collaborative event comprised (i) an informal introduction, and an inter-weaving of
11 (ii) a series of three participatory sessions, and (iii) short presentations (these contributed new
12 perspectives, evidence and understandings of different aspects of water governance, e.g., the
13 impact of the Water Act 2014; water abstraction reform; the ‘gap’ between top-down and bottom-
14 up governance approaches; the history of water governance in England etc.). The three
15 participatory sessions were designed to interactively engage participants in (i) systems thinking,
16 modelling, negotiating and evaluating in order to explore water governance, (ii) to formulate
17 problems and opportunities, (iii) to identify feasible and desirable changes, and (iv) identifying
18 opportunities for concerted actions. Sample output from the processes are shown in Figures 2 and
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32 3.

33 Using rich pictures (a systemic diagramming technique to engage collectively in
34 unstructured exploration of the situation) participants depicted the current water governance
35 situation as a dynamic and complex ‘mess’ of actors and elements, with conflicting interests within
36 and between different stakeholder groups, cycles of activities triggered by water crises such as
37 floods, droughts and pollution, as well as divergent governance structures and practices (Figure
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60 2a). In their own analysis of the rich pictures, participants came to appreciate that few people had
an overall understanding of all the elements in the water governance system (or the system as a
whole), and they did not always agree on where the boundaries should be placed. Nonetheless, in
identifying the different actors, beneficiaries, victims and transformations, there were some
significant areas of agreement about the aim and objective of the current water governance system,

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3 as well as about the persons involved and the constraints imposed upon it (Figure 2b).
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5 Subsequently, the participants used these systems models (and the insights that emerged from them)
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7 to inform and structure a discussion about the current water governance situation (what is) and the
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9 actions required to improve it (what ought to be) (Figure 2c).
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12 Building on these outcomes, in Event 2 participants depicted the ‘ideal’ water governance
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14 situation again as a dynamic and complex ‘mess’ of actors and elements. However, in contrast to
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16 the rich pictures from the first event, these rich pictures show water governance as a virtuous circle
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18 (or cycle) where different actors and elements in the situation work together towards shared goals.
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20 For example, there is a distinct focus on social/community-led learning and action, shared
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22 ownership and responsibility, and collaboration. There is also more emphasis on recognising (and
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24 measuring progress towards) multiple benefits of water governance, including human health and
25
26 well-being, in addition to water quality and other legislative standards (Figure 3a).
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31 In the subsequent analysis of the rich pictures, the different groups of participants varied in the
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33 aims and objectives of ‘ideal’ water governance; but, there were also some notable similarities,
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35 particularly regarding who should (or could) be involved or affected by the system, and to a lesser
36
37 extent, about the constraints imposed upon it. Consequently, through joint deliberation they were
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39 able to formulate a collective description of the ‘ideal’ water governance situation (Figure 3b): this
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41 is the ‘ought’ system introduced at the start of our paper. Importantly this description is not a
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43 blueprint but part of a process of generating epistemological devices to enhance collaborative
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45 knowing; the approach follows with the creation of conceptual models representing the sequence
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47 of activities needed to realise the ‘ideal’ water governance system (Figure 3c). Notably, each of
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49 the conceptual models recognise that ‘delivering human health and well-being’ is not something
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51 that can just be ‘done’ or ‘added-in’, but rather that it is an emergent outcome of the system as a
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3 whole; and at least one of the models recognises that it is also a means to engage people in water
4 governance. In addition, the models show water governance can be understood as an iterative
5 learning system.
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10 The actions to improve water governance which emerged from the collaborative events fall
11 broadly into four categories: stakes and stakeholding; facilitation; institutions and policies; and
12 knowing and learning about water governance (Figure 4). Many of the actions bear significance to
13 changing (transforming) the implementation of the WFD in England, particularly with regards to
14 institutionalising community/social learning processes (e.g. catchment-based approach, adaptive
15 management) and re-framing the enactment of the WFD as part of an iterative social learning
16 system. In terms of surfacing multiple, partial perspectives, valuing differences, creating
17 experiences of feeling listened-to, reaching accommodations between different interests, surfacing
18 institutional constraints and making power dynamics discussible, the systemic co-inquiry events
19 proved very effective (see Foster et al 2016; CADWAGO 2018) We also know the tools,
20 techniques, methods and ‘learning systems designs’ work well, based on research plus nearly 40
21 years of designing and delivering effective systems thinking in practice education at the Open
22 University (UK) (Maiteny and Ison 2000; Collins et al 2009b; Blackmore et al 2017).
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40 Since these events, these actions continue to be further developed. For example, some of
41 the participants have initiated systemic inquiries or other social learning processes within their
42 own organisations and projects; others are collaboratively developing ways of integrating the
43 implementation of the WFD with other policies and initiatives through community action at
44 catchment scale. Thus, although the participants openly stated that they found the tasks challenging
45 because it was difficult to decide what was relevant or not, the overall systemic inquiry process
46 demonstrated new pathways and options for systemic change. On the other hand key Defra
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3 participants were soon moved into other roles and their capacities to hold open sites for innovation
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5 and change (High 2002) were largely lost.
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8 **Discussion and Conclusions**

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10 The differences are striking between how stakeholders perceive the current water governance
11 situation (Figure 2), what they envisage for the future (Figures 3 and 4), and the account provided
12 of WFD implementation in England. Yet despite awareness, English water governance
13 arrangements still fail to account for the dynamic complexity that emerges in the co-evolution of
14 river and human systems. This case study spanning nearly 20 years demonstrates how difficult it
15 is to create an institutional ecology capable of enabling DPA-like praxis to flourish. This suggests
16 an agenda for future DPA scholarship emulating Scranton's (2015) claim that each day in the
17 Anthropocene we must be open to the death of what has come before. Institutional death is just as
18 important as institutional renewal.
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32 The systemic co-inquiry process described here is transformational through design as it
33 takes participants from social constructions of *what is*, to *what ought to be* based on an
34 accommodation of differences (not consensus) amongst those engaged. The approach combines
35 two lineages of systems scholarship, soft-systems methodology and critical systems heuristics
36 (Reynolds and Holwell 2010). The ideal systems description introduced at the start when
37 embedded in learning-based practice can be made operable, or in the process of enactment, can be
38 refined based on further learning. Unlike the English WFD implementation the process is both
39 systemic and adaptive.
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51 What can be said of the performativity of WFD implementation and the world of water that
52 has emerged? In 2000 the WFD was hailed for its ambitious and holistic approach to managing
53 Europe's waters. But 18 years later, England's waters/ivers are still in need of increased efforts
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3 to get, and keep, them clean and to govern them holistically. Defra and the Environment Agency
4 made optimistic assumptions about the status of water bodies in England based on the limited
5 evidence available at the time. Framing failure was built in from the start. Both the complexity of
6 the situation and the world (the Anthropocene) were underestimated as were the scale and urgency
7 of the tasks involved in implementing the WFD or, more widely, improving water governance.
8 Defra explicitly chose to transpose the WFD via secondary legislation, and to mobilise existing
9 bodies, skills, practices and resources to meet the WFD's obligations, with seemingly little
10 consideration for alternative options that may have been more effective in dealing with the
11 dynamic complexity in the situation. Implicitly and/or explicitly the WFD, which in its
12 construction favoured positivistic interpretations and presented many in-built contradictions
13 (Steyart and Ollivier 2007), was implemented in the form of classic hierarchical governance (Ison
14 et al 2007) with its associated practices. The transformative potential that comes from creating
15 space for co-construction of the issues and the emergence of changes in understandings, practices
16 and social relations that generate concerted action have not yet emerged in an institutionalised
17 form. Following the initiation of legal proceedings for a judicial review of the 2009 RBMPs, new
18 possibilities emerged but practices and interpretations remain contested despite the CaBA.

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40 The process of implementing the WFD in England failed to start out systemically. WFD
41 praxis has been premised on the mainstream understanding that knowledge precedes action (Hajer
42 and Wagenaar 2003a; Cook and Wagenaar 2012). What might have happened had understandings
43 emerging in the early 2000s about DPA, including participatory and social learning approaches,
44 been adopted? Equally, what might have happened had international understandings about
45 integrated catchment managing/governing (e.g. Mitchell and Hollick 1993) been part of the initial
46 implementation design? Recent research points to some possible answers to these counterfactuals.

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3 Foster et al (2018) reviewed current thinking and practices in relation to implementation
4 of the CaBA and WFD in the Irwell Catchment in central England. They found that a functioning
5 Irwell Catchment Partnership exists, but many people and organisations conceived and delivered
6 activities and projects independently of the catchment partnership making it difficult *'for those*
7 *involved in, or affected by, the outcomes of these activities and projects to engage in systems*
8 *thinking, social learning and collaborative actions at catchment scales'* (p. 17). The historical
9 legacy means that as the CaBA and WFD proceed, an implementation 'gap' has emerged and
10 continues as a result of failing to make clear at the outset how the two approaches are to be
11 effectively linked. At minimum the three historical pillars of DPA, interpretation, deliberation and
12 practice are clearly needed; these are necessary but not sufficient. Whilst some progress is evident
13 (though from a very limited sample) the absence of dedicated, long-term budgets for CaBA, and
14 thus limited investment in supporting and developing capabilities for governing (such as those
15 enabled in our systemic-co-inquiry events), means river catchment governance and improved
16 water status still face an uncertain future.

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19 Unfortunately having the praxis/process dimensions work well is not enough to effect
20 governance reform as our case and experience attests. Our systemic co-inquiry events, grounded
21 in the SLIM 'social learning' (SL) approach for water managing, is based on two key propositions.
22 The first is the idea that sustainable and regenerated water catchments are the emergent property
23 of social processes and not the technical property of an ecosystem. That is, desirable water
24 catchment properties arise out of interaction (engaging in issue formulation and monitoring,
25 negotiation, conflict resolution, learning, agreement, creating and maintaining public goods,
26 concertation of action) among multiple, inter-dependent, stakeholders in the water catchment (Ison
27 et al 2007). Enacting this process generates changes in understandings, practices and social

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3 relations amongst those involved. Concerted action arises from an unfolding trajectory of
4 collaborative actions; it goes well when attention is paid to: initial starting conditions (i.e., history
5 of the situation, including framing choices), facilitation, institutional arrangements, building
6 stakeholding and epistemological transparency (Steyart and Jiggins 2007). The second
7 proposition is that ‘social learning’ be understood also as a governance mechanism (and systemic
8 co-inquiry an institutional innovation), which can be fostered, mandated, resourced etc (Ison et al
9 2004; Ison 2017). The metaphor of the jazz ensemble captures what we mean by the duality at the
10 heart of social learning – i.e. it is both an entity (ensemble) and a process (creators of a performance
11 through rules and improvisation that satisfies an audience...or not). Investment in the entity (CaBA
12 and/or WFD) without the investment and commitment to the process (systemic water governance
13 through concerted action) truncates the performance and leads to dissatisfaction. Institutions like
14 judicial reviews can be helpful but in this case has yet to provide the critical tipping point that
15 generates and sustains a different governance system.
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33 Research within the SLIM tradition points to the need for methodological and conceptual
34 innovations within DPA (see Li this volume) as well as shifting focus towards intractable
35 ‘institutional ecologies’ that constrain deliberation i.e., social learning in our terms (e.g. Collins
36 and Ison 2010; Ison et al 2011; Blackmore et al 2016). The outcomes and learning from the
37 systemic co-inquiry process emphasize that water governance is not just about managing water,
38 but, consistent with DPA imperatives, about engaging with people across all scales, levels and
39 sectors to develop common understandings, common responsibility and common purpose, which
40 recognise and bring about multiple benefits, in this case for water governance, including
41 improvements to human health and well-being. Institutionalising community action at catchment
42 scale and re-framing the enactment of the WFD as part of an iterative social learning system are
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3 perceived to be key steps towards this end. The historical framing of DPA as a form of networked
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5 governance (Hajer and Wagenaar 2003a) is not helpful in this regard.
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8 Based on our experiences we would claim that good research, conceived and
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10 institutionalised in mainstream ways (e.g. as projects with fixed terms; producing papers and/or
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12 reports) has limited scope to transform governance, or more precisely governing praxis. This points
13
14 to the need for a future wave of DPA scholarship to shift focus to verb constructions of what it
15
16 does e.g. deliberative policy analysing, or deliberative governing.¹³ Failure to reframe runs the
17
18 risk of leaving DPA research practice within the liner model of ‘knowledge transfer’ rather than
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20 as an institutionalised form of reflexive practice that contributes to on-going transformation via
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22 co-design, co-production or co-inquiry. This may present challenges for how praxis evolves in
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24 different governance systems e.g. in one-party states – see Li this volume.
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29 Looking to the future of water governance in England and elsewhere, it is important to
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31 recognize the fundamental difference between ‘Community action’ at European scale and
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33 ‘community action’ at catchment scale. The WFD places an explicit focus on Community action,
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35 bringing together nations to address transboundary water management issues; and although it
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37 requires public participation in the development of the RBMPs, there is no requirement for
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39 community action at local level in their implementation. Nonetheless, as evidenced in this paper,
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41 community action at local level is of equal importance to the successful implementation of the
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51 ¹³ DPA can learn from the history of systems scholarship: early systems practitioners were called
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53 systems analysts, a term that conserved commitments to systems as ontologies rather than
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55 epistemologies.
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3 WFD. The WFD's motto of 'Getting Europe's waters cleaner, Getting the citizens involved' is
4 perhaps more relevant now than ever before.
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8 In England, sustaining systemic co-inquiry as an effective praxis and institutional
9 innovation within a conducive governance system comprising both WFD and CaBA is a key water
10 governance challenge moving forward. However, to paraphrase Hajer and Wagenaar (2003a p. 23)
11 practical judgment through co-inquiry is not 'a one-shot affair, but evolves slowly and often
12 tentatively and haltingly..'. Whether this is enough in the Anthropocene is of course the question.
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30 programme' [grant number GC12-1545:1].
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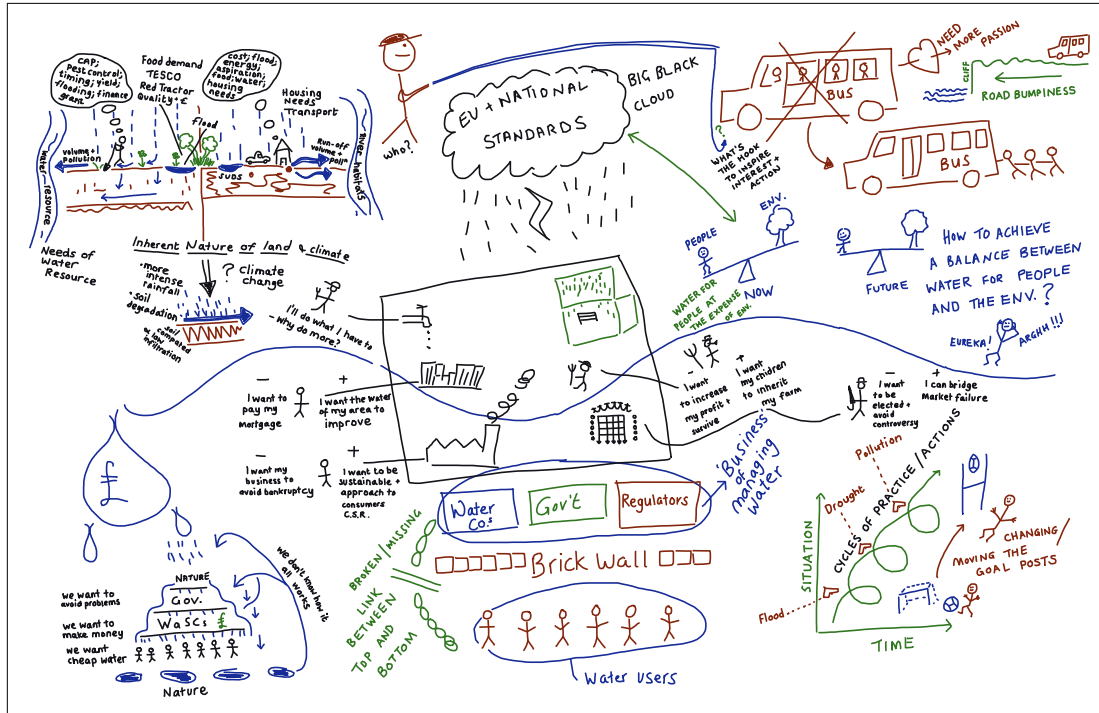
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Figure 1. Water Framework Directive implementation process (2000-2027) and deadlines by which specific actions must be taken



(a) Participatory session 1: The current water governance situation from the perspective of a group of workshop participants

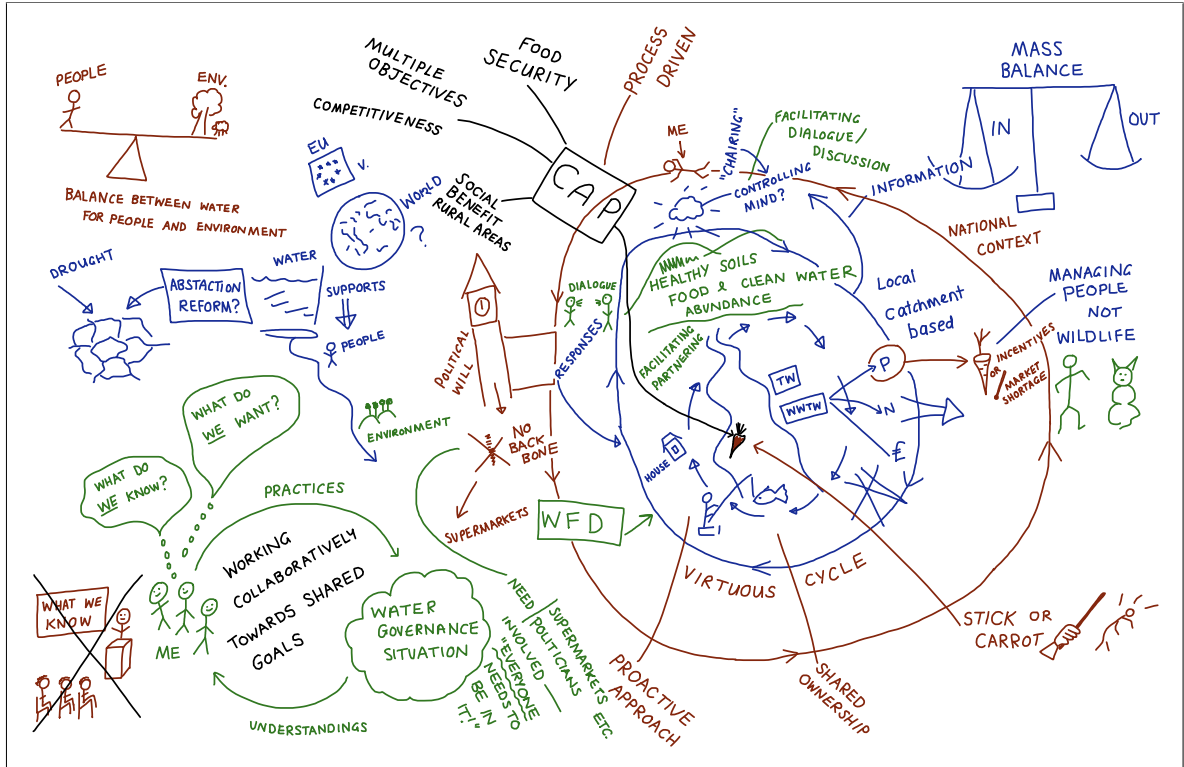
Beneficiaries	Politicians, ministers, bill payers, fish and shellfish industry, water users/consumers, some ecosystems, recreational users, irrigators
Actors	Press (media), academics, teachers, farmers, NGOs and other third sector volunteers, water and sewerage companies, Environment Agency, Natural England, OFWAT
Transformation	Public water supplied and waste water treated
Worldview	Provide goods and services to society, provide clean drinking water, natural capital under-valued
Owners	Property owners, water and sewerage companies, Government, voters, regulators, EU Parliament and Council
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Root definition	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

(b) Participatory session 2: BATWOVE and root definition applied to the water governance situation by a group of workshop participants

'Is'	'Ought to be'
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

(c) Participatory session 3: 'Is' versus 'ought to be' in the context of water governance from the perspective of the workshop participants

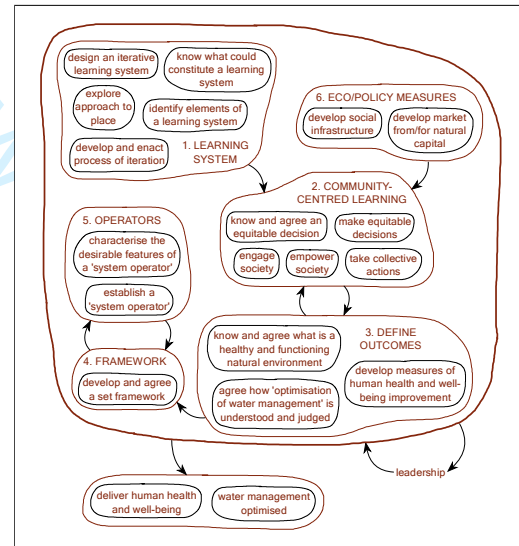
Figure 2. Collaborative event 1 — Understanding current water governance. Example outputs from the participatory sessions, redrawn from the versions created at the workshop (Foster et al., 2015)



(a) Participatory session 1: An 'ideal' governance situation from the perspective of a group of workshop participants

Beneficiaries	Citizens (people) and the environment upon which the depend
Actors	Society (with multiple/specific roles)
Transformation	Optimize the management of water in all its forms
Worldview	Human health and well-being
Owners	Everyone
Victims	People whose current granted rights/interests will be adversely affected by the 'ideal' governance system, e.g. water abstractors
Environment	social, environmental and economic capital
Root definition	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 constrains of social, environmental and economic capital

(b) Participatory session 2: BATWOVE and root definition applied to an 'ideal' water governance situation by a group of workshop participants



(c) Participatory session 3: Conceptual model of an 'ideal' water governance situation constructed by a group of workshop participants

Figure 3. Collaborative event 2 — Future water governance. Example outputs from the participatory sessions, redrawn from the versions created at the workshop (Foster et al 2015)

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

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)

IMPROVING WATER GOVERNANCE

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. 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; Foster et al 2015)

Figure caption list.

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Disclosure statement.

No potential conflict of interest was reported by the authors

For Peer Review Only

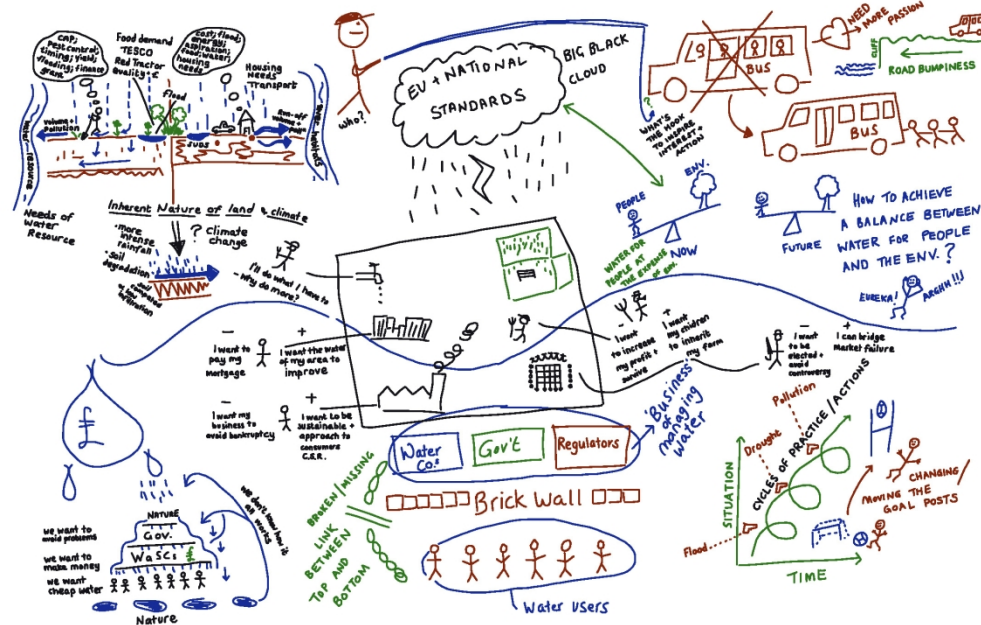


Figure 2. Collaborative event 1 — Understanding current water governance. Example outputs from the participatory sessions, redrawn from the versions created at the workshop (Foster et al., 2015)

A. Participatory session 1: The current water governance situation from the perspective of a group of workshop participants

276x177mm (200 x 200 DPI)

Beneficiaries	Politicians, ministers, bill payers, fish and shellfish industry, water users/consumers, some ecosystems, recreational users, irrigators
Actors	Press (media), academics, teachers, farmers, NGOs and other third sector volunteers, water and sewerage companies, Environment Agency, Natural England, OFWAT
Transformation	Public water supplied and waste water treated
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B. Participatory session 2: BATWOVE and root definition applied to the water governance situation by a group of workshop participants

201x161mm (144 x 144 DPI)

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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

C. Participatory session 3: 'Is' versus 'ought to be' in the context of water governance from the perspective of the workshop participants

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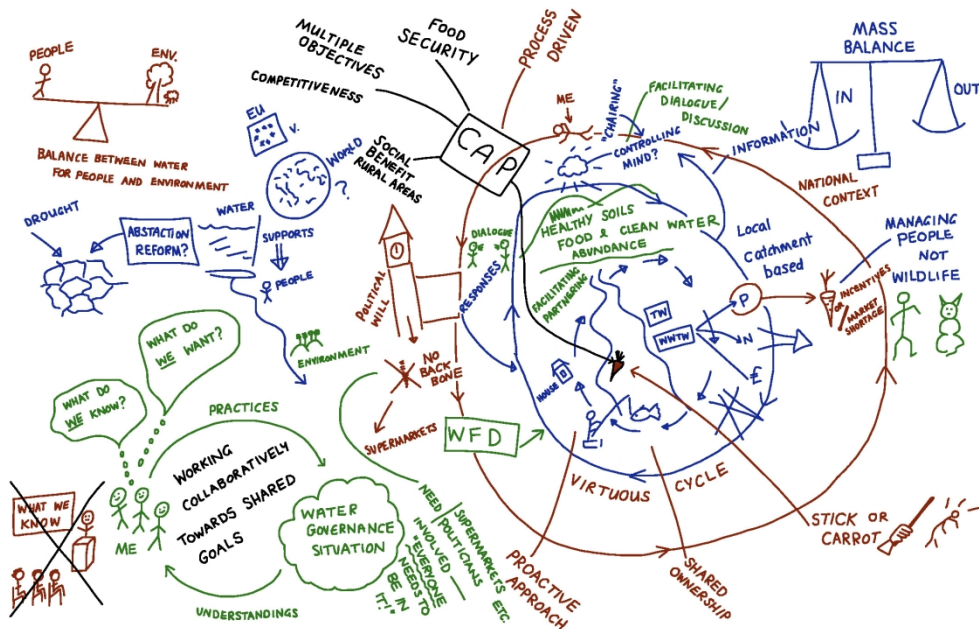


Figure 3. Collaborative event 2 — Future water governance. Example outputs from the participatory sessions, redrawn from the versions created at the workshop (Foster et al 2015)

A. Participatory session 1: An 'ideal' governance situation from the perspective of a group of workshop participants

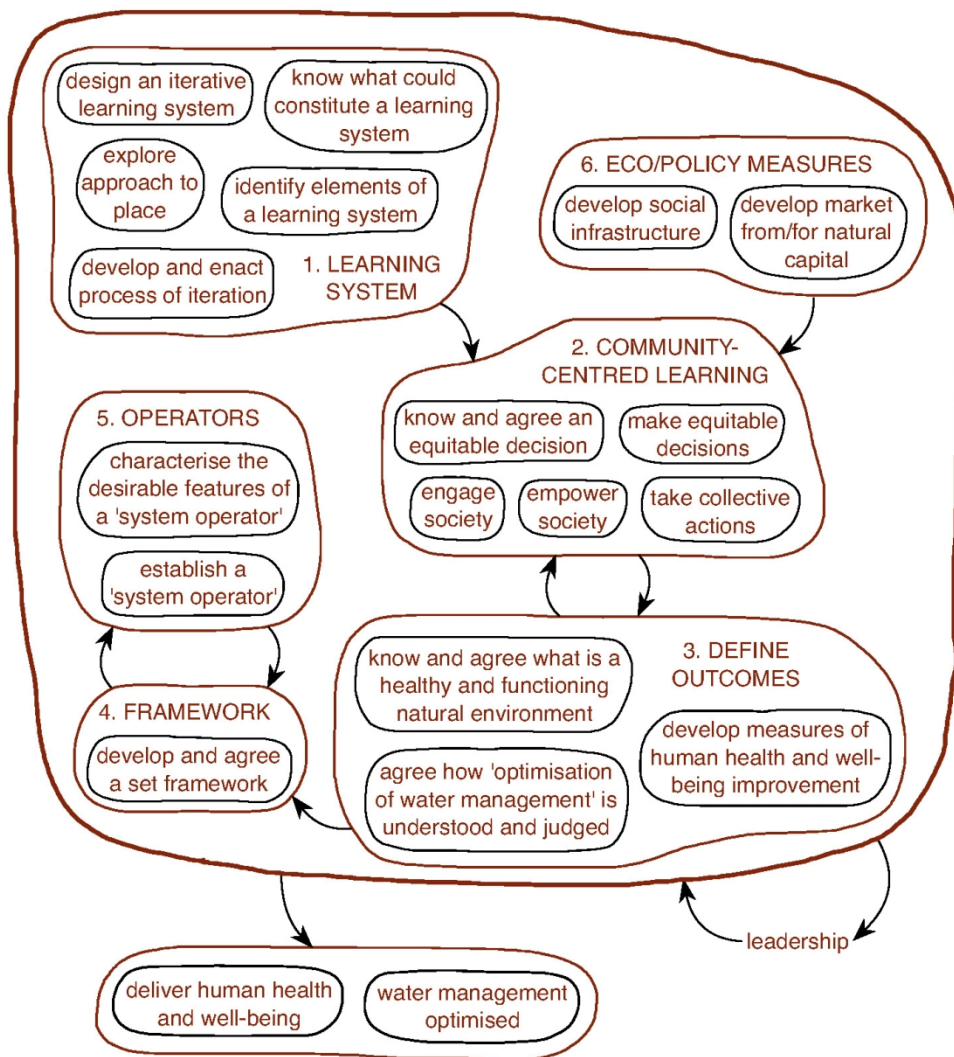
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B. Participatory session 2: BATWOVE and root definition applied to an 'ideal' water governance situation by a group of workshop participants

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C. Participatory session 3: Conceptual model of an 'ideal' water governance situation constructed by a group of workshop participants

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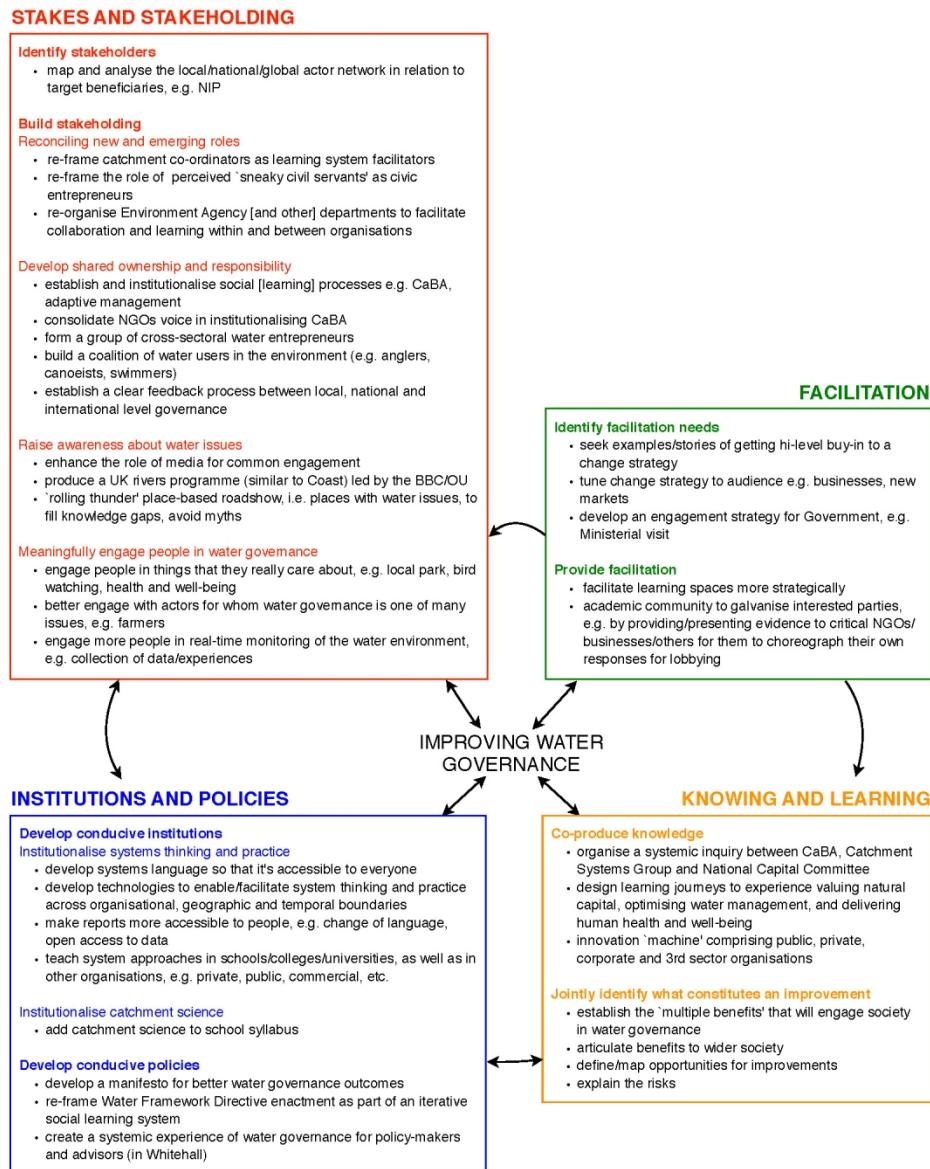


Figure 4. Actions to improve water governance in England (summarised and redrawn from the versions created at the workshop using an adapted version of a framework developed by Ison et al 2004; Foster et al 2015)

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