



Global Challenges

Climate Change Adaptation and Water Governance

CADWAGO Governance Learning Workshop London, 24th June 2014

by

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on behalf of the CADWAGO project team

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1 Introduction

The CADWAGO¹ project held its second² Governance Learning Workshop on Tuesday 24th June 2014 at Mary Sumner House in London, UK. The aim of the workshop was to engage in a co-inquiry, drawing on the perspectives of all participants to consider themes of mutual interest arising across Europe in the context of water policy and governance under conditions of climate change. This report presents an overview of the CADWAGO project, then summarises the workshop design and the results from each of the working sessions.

2 CADWAGO: past, present and future

CADWAGO is a three-year project led by Stockholm Environment Institute. It brings together 10 partners from Europe, Australasia and North America (Figure 1). The aim is to improve understandings and practices in relation to EU water governance. To this end, it draws on nine ongoing case studies in the EU and elsewhere (Figure 2). The findings from the case studies will be synthesized and used to inform changes (perceived improvements) in EU water governance.



Figure 1 CADWAGO partners

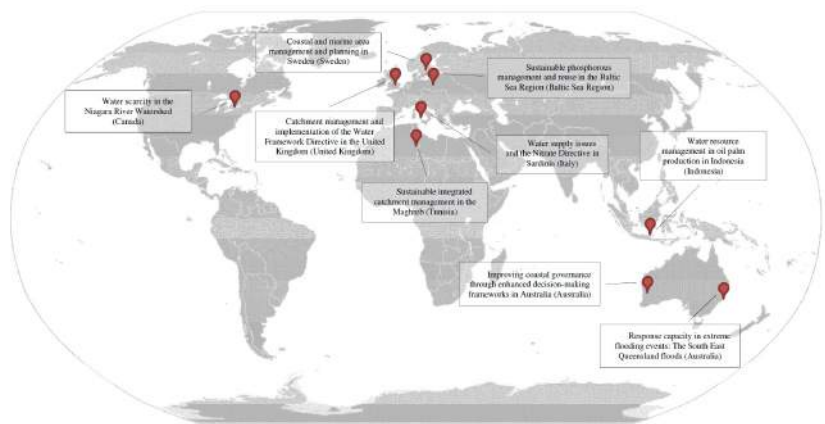


Figure 2 CADWAGO case studies

The research questions³ that CADWAGO will address are:

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?

In the 'first iteration' of research, key researchers in Work Packages 1, 2 and 3 used these questions respectively as lenses through which to view the nine case studies, and to identify themes that emerge

¹CADWAGO stands for *Climate change adaptation and water governance — reconciling food security, renewable energy and the provision of multiple ecosystem services*.

²The first workshop was held at the Swedish University of Agricultural Sciences in Uppsala, Sweden on 4th June 2013.

³From http://www.cadwago.net/?page_id=226 [last accessed: 08/07/2014]

from them. The Governance Learning Workshop, organised by researchers in Work Package 4, provided the opportunity for CADWAGO researchers to engage with other researchers and practitioners via co-inquiry in order to (re-)explore and develop themes of mutual interest in the context of water governance under conditions of climate change.

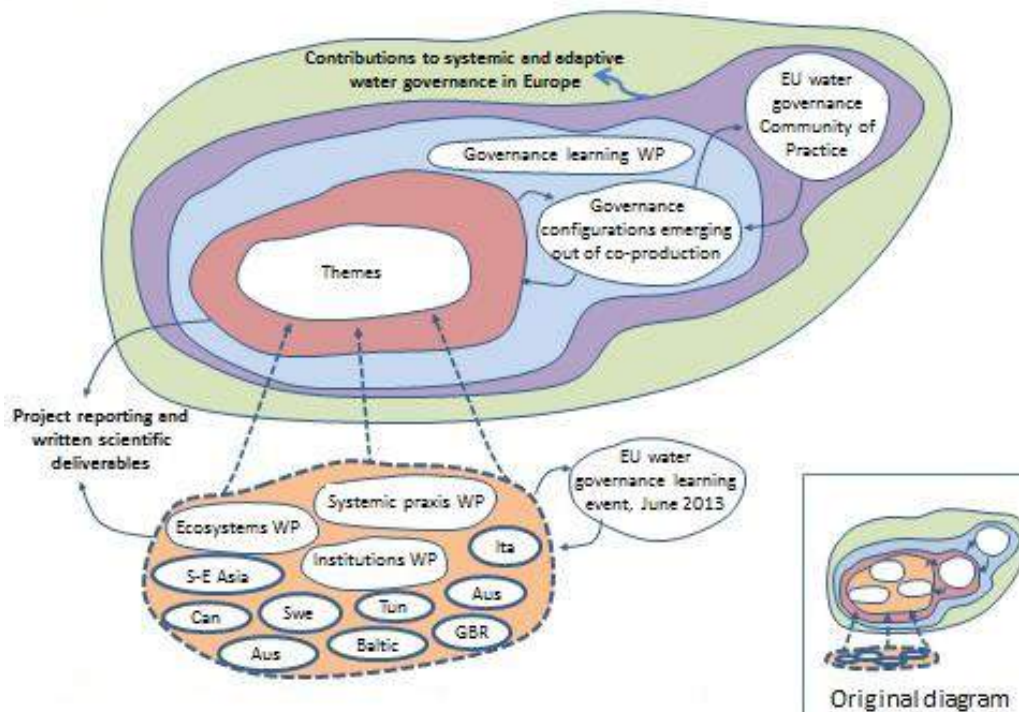


Figure 3 Conceptual framework for the second iteration of research in the CADWAGO project

In the ‘second iteration’ of research, the emergent themes from the case studies and workshop will be used as cornerstones for further investigation to illuminate different aspects of water governance (Figure 3). It is proposed to hold interim Governance Learning Workshops during the second iteration of research, and a final Governance Learning Workshop at the end of the project.

3 Data and methods

3.1 Participants

The workshop was designed around an on-going UK case study concerned with the evolution of a catchment-based approach to water governance. Potential participants were identified through existing networks from current and previous research. They were in almost all cases invited via email, which facilitated the invitation process. Approximately 30 potential participants were directly invited by the CADWAGO project team. A small number of potential participants were indirectly invited by invitees who forwarded their invite to others, such as work colleagues and friends, particularly in cases where the original invitee could not attend the workshop. A participant invitation letter was provided to make explicit both the purpose of the workshop and the expectations of the participants (Appendix A). Participants from almost all major UK-based stakeholder groups were represented at the workshop (Table 1); notable omissions included representatives from Natural England and the

Table 1 Workshop participants

Stakeholder group	Organization	Name	
CADWAGO	Stockholm Environment Institute	Neil Powell	
		Annemarieke de Bruin	
	Uppsala University	Rasmus Klocker Larsen	
		Olga Zuin	
	Open University	Ray Ison	
		Chris Blackmore	
	University of the Sunshine Coast	Kevin Collins	
		Natalie Foster	
	Brock University	Maria de Lourdes Melo Zurita	
		Steven Renzetti	
	NRD - Italy	Diane Dupont	Julia Baird
			Pier Paolo Roggero
		Giovanna Seddaiu	
Maria Laura Ruiu			
Phuoc Lai Nguyen			
Wageningen University	Severine van Bommel		
UK Government	DEFRA	Richard Cole	
		Ashley Holt	
	Environment Agency	Bob Harris	
		Damian Crilly	
Environmental NGOs	WWF	Kathy Hughes	
	The Rivers Trust	Arlin Rickards	
Consultants	Global Climate Adaptation Partnership	John Colvin	
Academics	Falmouth University	Mike Wilson	
	Humbolt University	Andreas Thiel	
	University of Queensland	James Patterson	
	Wageningen University	Jasper de Vries	
Other	Council of the Baltic Sea States	Maxi Nachtigall	
	Rete Rurale Nazionale	Francesco Piras	
	KWR Watercycle Research Institute	Stijn Brouwer	

local water industry, who were both considered to be key stakeholders in water governance. Representatives from these organizations were invited to participate, but declined to attend the workshop.

3.2 Workshop format

The one-day workshop comprised an informal introduction, a series of three highly interactive working sessions, and an evaluation session (Table 2). The three working sessions were designed to actively engage participants in systems thinking, modelling, negotiating and evaluating in order to explore water governance, formulate problems and opportunities, identify feasible and desirable changes, and take informed actions. The systems concepts and techniques used in the working sessions, and the purposes for their use, are explained where appropriate in section 4. The evaluation session incorporated a debrief of the working sessions and the completion of an evaluation task by the participants.

Table 2 Workshop schedule

Time	Session	Objectives	Techniques
0930	Registration	Issue name badges	
1000	Welcome	Disseminate emergency information (e.g. fire escapes, emergency telephone number)	
1015	Introduction	Overview of the CADWAGO project	
1030	Working session 1		Conversation maps
1100	Refreshment break		
1045	Working session 2	Formulate issues, opportunities and systems of interest	Theme analysis
1230	Lunch		
1315	Working session 2 continued		
1430	Refreshment break		
1445	Working session 3	Identify feasible and desirable changes; and take actions	Conceptual models
1600	Evaluation	Summary and evaluation	'Good bits, bad bits'

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. Thus, a brief explanation of the relevant techniques was given before each task in the working sessions. CADWAGO researchers, mainly from the Open University, acted as facilitators throughout the workshop, attempting to guide the participants through activities and discussions in a timely manner. It is acknowledged that the CADWAGO researchers' knowledge and experiences in the use of systems approaches influenced the choices made about the concepts and techniques used in the workshop. Furthermore, that alternative choices could have been made, perhaps for example by using rich pictures and root definitions instead of conversation maps; and that different insights or avenues for investigation may have resulted from doing so. Thus, it is not asserted that the overall design of the workshop is the best means of intervention, only that it is one possible means of intervention. It should also be stressed that no claim is made towards being objective. 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.

4 Results and discussion

[Sections 4.1 to 4.4](#) report on each of the three working sessions and the evaluation session respectively, providing a summary of the tasks undertaken and the outcomes.

4.1 Working session 1

The first working session focused on developing systemic awareness by exploring the participants' experiences of water governance using conversation maps. Work conducted by members of the Open Systems Research Group (now the Applied Systems Thinking in Practice Group) and other systems practitioners has shown that using conversation maps is a productive way to start a group-based inquiry into a complex situation ([Collins et al., 2005](#)).

4.1.1 Conversation maps

Conversation maps comprise two parts: a conversation ‘trigger’, which is written down and circled in the centre of a large piece of paper; and participants’ responses to the trigger, which are written down and linked together with a line as the conversation progresses, ideally using a different coloured pen for each participant. The process continues until all of the participants’ responses have been discussed and recorded on the conversation map (see [Open University, 2006](#) for further details).

Working together in small groups, the workshop participants created five conversation maps (one per group) depicting the main topics of their conversation and the relationships between them (e.g. [Figure 4](#)). The aim here was to capture their perspective 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.

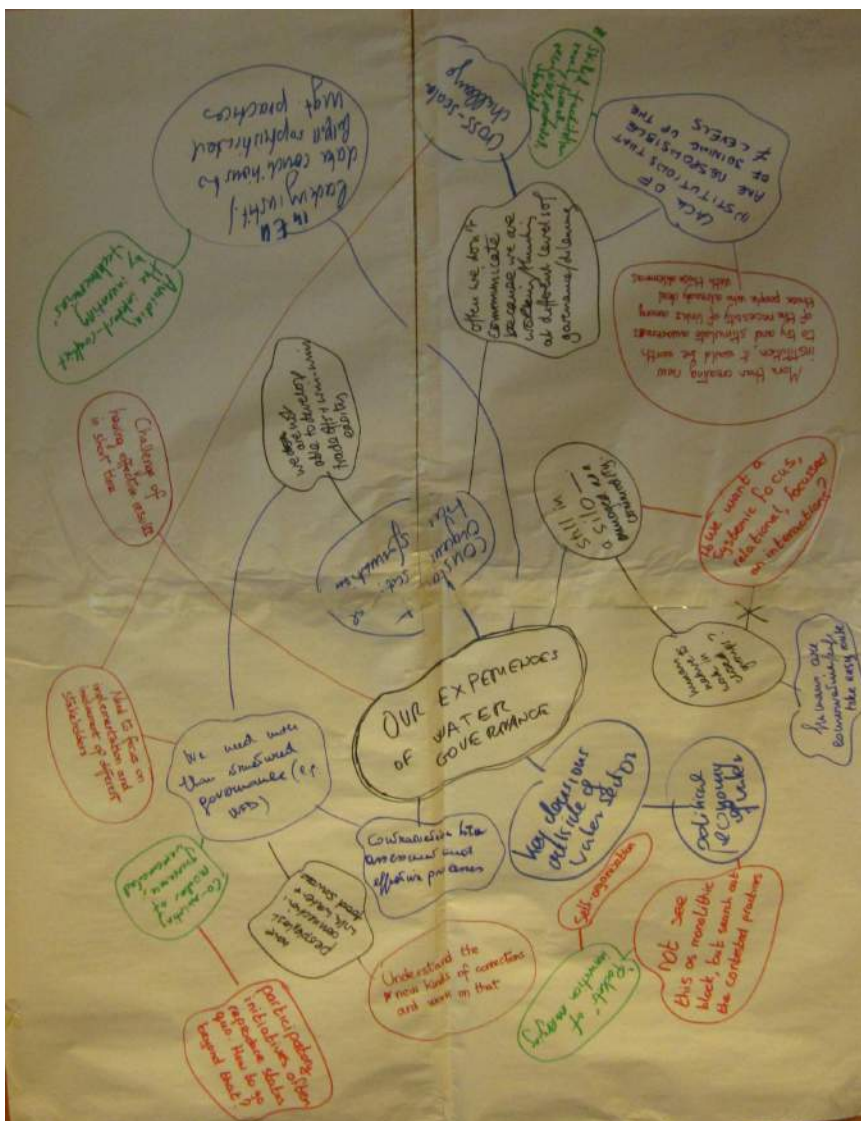


Figure 4 A conversation map for ‘our experiences in water governance’ constructed by a group of workshop participants (see also [Appendix B](#))

The conversation maps revealed many different facets of water governance: power relations and social justice; water quality and quantity; purpose of water governance; spatial and temporal

scales/levels of governance; types of governance approaches (e.g. state, market, social); water crises (e.g. floods and droughts); water security and access to safe drinking water; framing of water; roles and responsibilities in water governance; adaptability (e.g. to climate change); multiple diverse perspectives (e.g. about water pollution); stakeholder engagement and dialogue (e.g. consultation, participation, social learning); acceptance of institutional and technological changes; economic issues; habitats and species (e.g. wetlands, birds); and knowledge and learning processes. Furthermore, the process of collaboratively creating the conversation maps in small groups was particularly effective in terms of initiating and engaging the participants in dialogue *with each other* about their experiences of water governance. It enabled the participants not only to voice their own perspective, but 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.

4.1.2 Emergent themes

Using the conversation maps as a visual aid, the participants were asked to identify themes emerging from their conversations that they perceived to be important in the context of water governance. Then, by facilitated discussion, the themes from each group were talked through in plenary and clustered into a collectively agreed set of themes (Figure 5). The aim here was not only to provide a base from which to formulate problems, opportunities and systems of interest, but also to further develop the participants' systemic awareness, working towards a shared understanding of water governance.



Figure 5 Clusters of themes identified by the workshop participants from their conversation maps

The participants identified six themes (shown in [Figure 5](#)):

- roles and responsibilities in changing dynamic of water governance;
- breaking-out of siloes and governance structures;
- mismatch between expectations of new processes and the outcomes;
- water crises as opportunities for governance change;
- knowing and learning about water and its purpose; and
- planning under conditions of uncertainty.

As with the conversation maps and other models created during the workshop, the themes are a simplified representation of water governance from the participants' perspectives. They do not dwell on the details of water governance. For example, they do not describe specific governance structures, nor detail specific water crises. Nonetheless, the task brought together the participants' experiences of water governance, and in doing so, created space for reflective thinking and debate water governance as a whole, leading to new insights and understandings. In particular, it helped to surface the worldviews which justify and attribute meaning to water governance. Perhaps most importantly, it implicitly developed the participants' systemic awareness and shared understandings about water governance based on the declared worldviews, and served to inform subsequent tasks in the workshop.

4.2 Working session 2

The second working session focused explicitly on developing shared understandings by identifying issues and opportunities for change (perceived improvements) in water governance via facilitated discussion, and formulating systems on interest using 'sticky dots'.

4.2.1 Themes: issues and opportunities

Having collectively agreed a set of themes relevant to water governance, the participants were asked to sign their initials against the theme that they would like to further investigate; they were then assigned to groups on the basis of their choice of theme⁴. By facilitated discussion, the participants worked together in their respective groups to identify issues and opportunities for change in the context of their chosen theme (e.g. [Figure 6](#)). At the end of the allocated time to complete the task, they were asked to distribute five sticky red dots to the issues and/or opportunities that they perceived to be the most important in terms of bringing about feasible and desirable changes in water governance. The issue or opportunity with the most dots per theme/group was taken forward as a 'system of interest' for further investigation in the third working session. The immediate aim here was to define the structure and boundary of the participants' system of interest. In doing so, the intention was not only to provide a base from which to identify feasible and desirable changes in water governance, but 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*).

⁴No participants chose the themes 'mismatch between expectations of new processes and the outcomes' and 'planning under conditions of uncertainty', and thus, these themes were not investigated in the second or third working sessions.



Figure 6 Issues and opportunities identified by a group of workshop participants in relation to roles and responsibilities in water governance: ‘issues’ on orange Post-it notes™; ‘opportunities’ on yellow Post-it notes™ (see also [Appendix B](#))

The participants formulated four systems of interest:

- a system to generate ownership of issues by people ‘on the ground’;
- a system to orchestrate the dynamic between local, joined-up action and government ‘siloes’;
- a system to institutionalise opportunities [social capital] arising from water crises; and
- a system to address hierarchies of knowledge and conflicts amongst different types of knowledge.

The participants in each group were generally in agreement about the main issues and opportunities arising in the context of their chosen theme. Thus, they appeared to have little difficulty in collectively formulating a ‘preferred’ system of interest. Together with the conversation maps, the task sufficed to bring about a common understanding and shared expression of the participants’ system of interest from which feasible and desirable changes (improvements) were later identified.

4.3 Working session 3

The third working session shifted the focus of the workshop towards identifying and enabling concerted actions to continuously improve water governance by making conceptual models relevant to realising feasible and desirable changes in the participants’ respective systems of interest, and using the models to inform and structure debate about water governance and the actions required to improve it.

4.3.1 Conceptual models

Conceptual system models originate from Soft Systems Methodology (Checkland, 1981, 2000; Checkland and Scholes, 1990). They comprise a logically linked set of activities that together enable the system of interest to function as intended. The activities are written down on a large sheet of paper or on Post-it notes™, then clustered, or more ideally, linked together with arrows in the order that they must be undertaken (see Open University, 2006 for further details).

Working together in the same groups as for the second working session, the participants created four conceptual models (one per theme/group) representing the activities that would have to be undertaken if the system of interest that they formulated in subsection 4.2 were to function as intended (e.g. Figure 7). The conceptual models were then compared to the real-world 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 findings from the comparisons were shared in plenary at the end of the working session. The purpose of the task was to engage the participants in further discussions about water governance, and to identify the immediate actions necessary to improve it.



Figure 7 Roles and responsibilities conceptual model constructed by a group of workshop participants (see also Appendix B)

The conceptual models encapsulated and visualised the participants' thinking about the activities required to realise their systems of interest. The process of comparing the models and the real-world situation identified some commonalities, but also major differences with significant implications in terms of taking actions-to-improve. For example:

- the models implied a more pro-active, collaborative approach to water governance which takes into account the many different types of knowledge and experiences of those involved;
- a relationship between stakeholders is implied which requires a richer stakeholder dialogue, both within and between sectors;
- structures and processes would need to be developed which enable the system to function as intended, such as the development of better feedback processes between Government bodies and other organizations; and
- a more organised system of monitoring and evaluation is implied which recognises the multiple benefits arising from the system such as improvements in human well-being and shared responsibilities, not just economic cost savings or improvements in ecological water quality.

There was not enough time to discuss these points in detail. However, from the limited discussions, it became clear that there are some actions that the participants can take to improve water governance, but others that require that active input or approval of other people who did not attend the workshop. Regarding the latter, some of the participants suggested that follow-up workshops in a more localised context, or other undertaking such as academic research, could help to further progress towards improving water governance.

4.4 Evaluation session

Participants were asked to provide anonymous responses to two evaluation questions: 1) What are you taking out of the workshop? and 2) How can the workshop be improved? The participants' responses to these questions are summarised in [tables 3](#) and [4](#).

Table 3 Participants' responses to the question 'what are you taking out of the workshop?'

Participants' responses	Number of responses ^a
<i>New networks</i>	
New networks/friends	4
<i>New perspectives</i>	
New disciplinary perspectives	1
Reflections/challenges on own and others' point of view	3
<i>New ideas</i>	
New ideas [unspecified]	1
New ideas on how to create ownership in governance issues	1
<i>New insights (changes in understandings)</i>	
Better understanding of water governance dilemmas/issues	3
Better understanding of water governance processes	2
More specific insights from various fields	1
<i>New skills/techniques (changes in practices)</i>	
Learned dynamic and inclusive workshop structure and processes	5
Valued learning through dialogue, intervention not in isolation	1
[Learned about] interesting practice examples	1
Validation of approach from experts	1
Trust in the process	1
<i>New opportunities</i>	
Opportunities for Knowledge Exchange Trials	1
<i>Commonalities and differences in water governance</i>	
Common challenges/issues in water governance amongst the participants	5
Themes emerging from CADWAGO case studies reinforced by workshop	2
Diversity of experiences in water governance amongst the participants	1
<i>Emergent thinking and outcomes</i>	
Need to publish/share examples of good water governance	2
Monitoring and evaluation came up unexpectedly in most exercises	1
Investments in social capacity can be effective in breaking 'silos' and re-newing institutional assets	1
Conviction that innovated change can be achieved by doing more work of today's type	1
Challenge: How to represent flexible interconnections in governance?	1
Practice requires normative structures	1
Variety requires variety — there is no one-size-fits-all governance model	1
It's still complex/difficult — the answers are far away!	1
A positive view of institutionalisation [of social learning] after 10 years	1
Research agenda	

^a Some participants suggested a number of different things that they were taking out of the workshop, all of which have been taken into account in the number of responses stated

Table 4 Participants' suggestions for improvements in the workshop

Participants' responses	Number of responses ^a
<i>Structures and processes</i>	
Meeting room with natural light/windows	5
More time for tasks/discussions	4
More/better closure, e.g. how the outcomes will inform CADWAGO project	3
More about progress of CADWAGO project	2
Need to discuss more concrete/specific issues	2
More use of case studies	1
Need materials before meeting to provide deeper thinking instead of superficial responses	1
Need for a mediating object	1
Need to link the process to the practitioners more explicitly	1
Need to develop better narrative about water governance and climate adaptation	1
<i>Stakeholder involvement</i>	
More [diverse] stakeholder participation	4
More commitment from participants to implement actions emerging from the workshop	2
More formal water governance groups, e.g. flood committees, river basin liaison panels	1
More landowners, farmers	1
More actors from successful case studies	1
More people with 'convening power'	1
More equal gender balance	1

^a Some participants suggested a number of different improvements, all of which have been taken into account in the number of responses stated

The responses are generally self-explanatory. However, there are four key points which merit further consideration:

1. The participants' responses to the evaluation questions suggest that significant learning occurred during the workshop, particularly in relation to: 1) learning about climate change adaptation and water governance through the sharing of knowledge and experiences by the participants [changes in understandings]; and 2) learning about dynamic and inclusive structures and processes (systems methods/techniques) that facilitate and enable the sharing of knowledge and experiences amongst the participants, which may lead to concerted actions-to-improve climate change adaptation and water governance [changes in practices].
2. New networks were a valued outcome of the workshop by several participants. Increasing the diversity of participants — not only in terms of organizations but also gender balance, as suggested by the participants — could help to further develop new networks as well as to reveal new/different insights or avenues for further investigation into water governance.
3. The participants' most-suggested improvement related to the need for a workshop venue with windows. The choice of venue was limited by both by geographical location, room availability and cost. Nonetheless, it is appreciated that a venue with windows may have improved the ambient conditions of the workshop; this should be kept in mind for future workshops.

4. Some of the participants suggested that more time for discussion/tasks would constitute an improvement in the workshop. However, it should be appreciated that increasing the duration of the workshop may also implicitly reduce the number of participants who can attend due to time constraints. Thus, it is inherently necessary to strike a balance between making the workshop duration long enough to achieve meaningful outcomes, yet short enough to enable stakeholder participation.

5 Conclusions

The workshop presented in this report aimed to engage CADWAGO researchers in a co-inquiry with other researchers and practitioners in order to consider themes of mutual interest arising across Europe in the context of water policy and governance under conditions of climate change.

The outcomes demonstrate that the workshop generally proved successful for this group of stakeholders. It engaged them in dialogue and in working together using skills and techniques in systems thinking, modelling, negotiating and evaluating, leading to new insights and shared understandings about water governance, and concerted actions to improve it.

Notwithstanding that there are some refinements that can be made to further improve the workshop structure and processes as a result of 'lessons learned', the participants' feedback confirms that it was generally appropriate in this context. However, the workshop has also raised wider questions about enabling — on a local, national and global scale — the new and different ways of thinking and acting that are necessary to meet the future challenges of climate change adaptation and water governance. The on-going work of the CADWAGO project provides an opportunity to begin to address some of these questions.

For further information on the CADWAGO project, including the series of Governance Learning Workshops, please visit <http://www.cadwago.net>.

A Participant invitation letter

Information about the workshop, including the expectations of the participants, was emailed to potential participants in the form of an invitation letter (Figure 8).

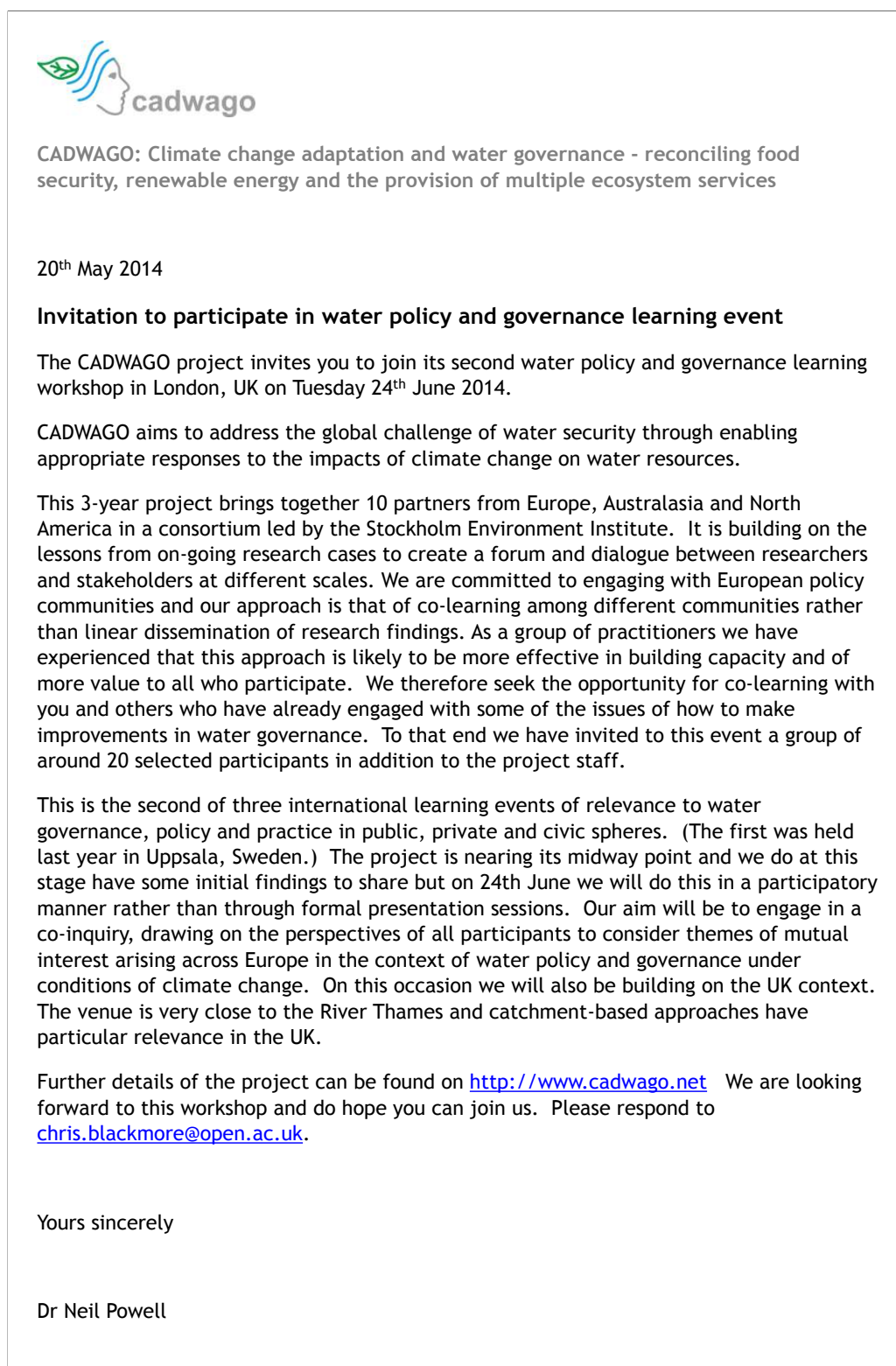


Figure 8 Participants' invitation letter

B Photographs from the working sessions

Figures 9 and 10 show photographs of the conversation maps and conceptual models constructed by the workshop participants.



Figure 9 Working session 1: conversation maps for 'our experiences in water governance' constructed by the workshop participants



Figure 10 Working sessions 2 and 3: issues and opportunities, and the associated conceptual models constructed by the workshop participants

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