

Water managers' views
on the social dimensions of urban water

Zoë Sofoulis

**Report from *Cross-Connections: Linking Urban
Water Managers with Humanities, Arts and Social
Sciences Researchers***

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This Report

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The Commission's Fellowship Program was established in 2007 to develop future leaders for Australia's water sector by advancing knowledge and building capacity in the sector. The program contributes to the National Water Initiative (NWI) by supporting water professionals with at least 10 years experience to undertake research in areas that could make a significant contribution to knowledge of Australia's water management and use

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Executive summary

1. CHANGES IN THE WATER INDUSTRY

Interviews with water managers reveal recent changes in response to intractable problems of climate change, diminishing supplies, population growth and community demands for more involvement in water planning:

...the industry's recognizing that it's got to shift from an engineering and technical approach to a much broader approach that recognizes engineering and technical efficiency but also recognizes what the human dynamic is...

2. RE-ENGINEERING ENGINEERS

Senior water managers find current wisdom at variance with their earlier training, while changes in training of water professionals, including the shift from 'pure' engineering to environmental engineering and systems thinking, are enabling the industry to better deal with non-technological aspects of urban water systems:

I did a Masters in Environmental Management and I think through that process, Environmental Science degrees are intentionally broadened, to look at the economics, the law, the social sciences.

3. SOCIAL SUSTAINABILITY

The water industry is now grappling with the social dimensions of sustainability, including urban liveability (as in the *Cities of the Future* initiative), and starting to move away from the conventional Decide, Announce, Defend (DAD) style of decision-making, to participatory and learning models:

[Usually] they'll bring in people at the end of a decision-making process [...] Whereas my understanding of 'social' is to make sure that people are there right from the beginning in that whole decision-making process, and so there's that knowledge-building as you're going along with it.

4. IMPORTANCE OF SOCIAL RESEARCH & COMMUNITY ENGAGEMENT

Research on society and cultural norms was considered important for gaining public acceptance of water projects, because water is highly contested and *pity help people who don't take into account the views of their community and the social trends going forward because you'll just never get a project up.*

Market research approaches aimed at *trying to conserve water ... through a behaviour change program* are increasingly differentiated from community engagement strategies with a more democratic ethos of informing people *for them to make up their own minds about things*, or direct participation where water managers *are working with the community to develop up our [water planning] strategies.*

5. TOPICS AND USES OF SOCIAL RESEARCH

Aside from helping gain community acceptance and behavioural change, research could gather evidence to back up hunches, or to help win arguments for changes in government policy. Because it could reveal communities' different values and acceptance of alternate services, it was sometimes avoided: *It's often laziness to say, we don't think people will accept this, let's not worry about it.*

The growth of the social sustainability agenda is not matched by industry staffing, and almost all social research is outsourced, with the rationale:

... the problem with having it [research] all internally means that you can get stuck in a rut and not move forward and not keep up with the different ways [...] we have such excellent research companies [...] and we pick the best.

6. SOCIAL ASPECTS OF DECENTRALISED SYSTEMS

There were worries about over-enthusiastic householders gaining control and the experts losing control through proliferating on-site systems. While rainwater tanks made little economic sense, research on their enthusiastic adoption could hold clues to social sustainability:

... what I believe should be happening in the industry is about exploring why. And re-aligning these incentive programs, re-aligning the kinds of visions and messages that we've given to the community, [to] say 'we get what you're doing.' To acknowledge it, to support that.

7. PROBLEMS ENCOUNTERED - *What do we do on Monday?*

There was some dissatisfaction with surveys that reported but did not change attitudes. Water managers are confounded when the most effective sustainability intervention strategies cannot be 'scaled up.' The different drivers of academic and industry research and the difficulties (or disinterest) in translating findings into procedural recommendations were also problematic:

... at the end of the day, people say, what do you want me to do? People use the language, 'What do I do on Monday?' So they're the [projects] that are considered a flop where there isn't a direct outcome in an action to do.

8. TRANSLATION – A KEY TO SUCCESS

Translation between different types of knowledge and language is vital to the success of social research on water, though disappointment is likely when outsourced researchers are expected to deliver insider-quality knowledge. Success in translating between industry and university researchers, experts and communities, or different knowledge frameworks often depends on particular individuals:

You need someone who can communicate to both of you. So, if you've got someone who's fairly wishy-washy, then forget it, because an engineer will dismiss them straight away.

9. FACILITATING CHANGE

The most prevalent model is of cognitive/behavioural change (attitudes→ behaviour→ choice), stimulated by media messages or experiences like drought. Theories of socio-cultural change beyond organisations are lacking, other than an intuitive sense of the influence of social networks via *barbeque chats*, or in notions of social learning being adopted by the most forward-looking organisations.

10. FUTURE SOCIAL RESEARCH

Future research will need to *get beyond averages* and deal with social complexity as well as changing expectations of water services. The liveable cities and engagement agenda could be harder to achieve

... if your whole water supply and sewerage department is full of engineers and scientists [...] our organisations need to be well-populated with political scientists and social scientists and whatever else to reflect better their customer base.

Introduction

The project

This document, *Water Managers' Views on the Social Dimensions of Urban Water*, is produced as part of the project *Cross-Connections: Linking Urban Water Managers with Humanities, Arts and Social Sciences Researchers*, a one-year project funded by the National Water Commission and conducted by Dr Zoë Sofoulis (Fellow) and Dr Justine Humphry (Research Associate). It aims to facilitate knowledge exchange and strengthen connections between researchers from the Humanities, Arts and Social Sciences (HASS), and government and industry organisations involved in urban water and water services.

The first stage of the project collected information about researchers and recent projects on water with a social or cultural focus. This is being compiled into a small directory (due February 2011). This document *Water Managers' Views* is an outcome of the second stage, where interviews were conducted with people from the water industry and relevant government departments in order to take a snapshot of the water sector's current concerns about the social and cultural dimensions of water management and research, and to identify obstacles and prospects for addressing the social dimensions of water sustainability. Two knowledge exchange workshops are being planned for February 2011. The final report (April 2011) will bring together findings from the whole project, including interviews with HASS researchers; it aims to outline uses for socio-cultural research, to offer guidelines for cross-sector partnerships, and to sketch fresh agendas for socially sustainable approaches to urban water management.

Aims and method

The research on which this document is based aimed at eliciting water planners' and managers' current views and future expectations about the social dimensions of urban water management and sustainability. Questions covered peoples' backgrounds and sample projects, and probed understandings of social sustainability; the roles and values of different kinds of social research to government and business water planning, management and conservation programs; problems encountered and tips for successful research collaborations; and recent and projected changes in the water industry's approach to social aspects of their operations.

The research entailed conducting face-to-face, semi-structured interviews with one or two people, plus one group of five and one of ten participants. Interviews typically lasted 1 – 1.5 hours and were conducted in people's workplaces, many of them under conditions of anonymity in subsequent reporting. 29 water managers participated in 17 interviews or discussions, plus a group of 9 consultants and university researchers and postgraduates. All but two of these 18 recorded conversations were professionally transcribed. Interviewees were drawn from government departments concerned with environment and/or water, local government, water utilities, a peak industry body, and STEM¹-sector university researchers with close ties to industry. Their positions ranged from CEOs to managers of policy, research, communications and sustainability, as well as researchers and independent

¹ 'STEM,' an acronym for Science, Technology, Engineering, Mathematics, is used in distinction from 'HASS' (Humanities, Arts and Social Sciences) in the May 2010 report by John Spoehr and colleagues on *Connecting Ideas: Collaborative Innovation for a Complex World* (Spoehr et al 2010). Interviews conducted with a comparable number of HASS sector researchers will inform the final report of this project.

consultants, from Western Australia, South Australia,² Victoria, New South Wales, and Queensland.

This document gathers together and distils interview responses under ten themes, through direct quotes and paraphrases of individual comments and summaries from a range of responses. It presents a range of views of people involved in urban water management, by selecting, grouping, arranging and linking salient material from the transcripts and recordings.

Themes

1. Changes in the Water Industry
2. Re-Engineering Engineers
3. Social Sustainability
4. The Importance of Social Research and Community Engagement
5. Topics and Uses of Social Research
6. Social Aspects of Decentralised Systems
7. Problems Encountered - What do we do on Monday?
8. Translation – A Key to Success
9. Facilitating Change
10. Future Social Research

Approach

The interviews were conducted as part of a project to not only investigate but also to advocate growing links between social research and water management: the interview questions reflected this orientation. The interviewer did not maintain a conventional neutral stance, but would sometimes state her own ideas, prejudices, or analyses, and report on others' ideas. This approach allowed the interviews to become part of an iterative process, in which the observations articulated by earlier interviewees, and the interviewer's emergent findings, could be presented for testing and response in subsequent interviews. This method helped an 'outsider' to the water management community calibrate her understandings with the concepts, language and reality shared by that community.

Reading this document

This document is not intended as a report in the conventional sense; it does not make any grand conclusions or recommendations, though it does forward some ideas and limited analyses as stimuli for discussion and further comment. It aims primarily to present the views

² Only one municipal water manager from Adelaide was interviewed; the Fellow's approaches to water utilities did not elicit responses.

of those in the water sector to each other, and for this reason is composed largely of quotations.

In the following material, direct quotes from interviewees appear in *italics* and without quotation marks. Quotes from writings are not italicised. Statements the author wishes to emphasise are presented in **bold**, and emphases made by the interviewee are underlined. Quotes are often edited to reduce or eliminate the redundancies of ordinary conversation. Ellipses are marked as ... where the speaker paused or trailed off, or where just a few words are deleted. The mark [...] indicates deletion of a phrase or sentences from a passage of conversation, while [...] with four dots indicates a response from a different part of the interview. Words enclosed in square brackets may be grammatical substitutions or may supply information missing from the quote. To avoid identification of individuals, but allow readers to identify quotes from the same person, each interviewee has been assigned a letter of the alphabet (and some a number as well) and their jobs are described in generic terms.

Comments invited

This document is intended as part of the iterative research process begun in the interviews: as a provocation for further comment, debate, analysis and feedback from the interviewees and other readers with interests in these topics. Those responses in turn will be taken into account in developing subsequent materials circulated from this project. Please send comments in emails or add them to the electronic document (please save with your name in the filename) and send to z.sofoulis@uws.edu.au. Copies are available from that address or downloadable from the 'Cross Connections' page of the Centre for Cultural Research website (Research Projects 2010 - http://www.uws.edu.au/centre_for_cultural_research/ccr/projects.)

Ethics statement

This study was approved by the University of Western Sydney Human Research Ethics Committee (approval number H7875). Complaints or reservations about the ethical conduct of this research may be directed to the Committee through the Office of Research Services (Tel 02-4736 0883 Fax 02-4736 0013 Email humanethics@uws.edu.au.) Any issues raised will be treated in confidence and investigated fully, and complainants will be informed of the outcome.

1. Changes in the water industry

We're no longer the kingpins. We're important influences but we're not the sole central authority for delivering water supply. – Senior water manager F

This research was particularly interested in finding out about future changes needed for the water industry to address the social and cultural dimensions of urban water management. It was apparent from the outset that significant reorientations are already underway in this future-oriented sector, which has been grappling with climate change, adaptation, sustainable resource management and projected population growth and alternative sources longer than most other industries. This sector has also gained significant public support for demand reduction measures, including changes in domestic and outdoor water fittings and uses.

One change has been a shift from a *hard-core engineering* perspective towards an environmental one:

... the utilities over the last two decades in particular see themselves as being more involved in environmental management rather than purely management because of the very close link between the environment and water. – Senior water manager G

A strong emergent concern is to work more effectively with other sectors (energy, transport, IT, urban design) and to increasingly cultivate and partner with urban communities to *share responsibility* for water. For example, *Cities of the Future* is a significant national and international effort to articulate the principles of liveable cities in which urban water service providers and planners are repositioned as partners and co-contributors in creating liveable and sustainable urban environments. As its initiator, Rob Skinner, explains in a related paper (Skinner et al, 2010):

The size and complexity of climate impacts also highlight the need for the water sector to look beyond their immediate or traditional areas of influence. This means working with other essential infrastructure providers (e.g. energy and transport) to develop integrated city wide solutions and ensuring that Water Sensitive Urban Design (WSUD) principles and features are built into new developments at the early stages of urban planning (rather than being tacked on at the end).

One senior water manager reflects on how In the old 'predict and provide' approach, where planning was based on projections from past stream flows, ***the need to do social research was probably minimal because you knew what people wanted in the past, you know what they wanted in the future.*** In water planning under climate change, technology-centred solutions give way to more complex approaches:

... technology is seen as a provider – providing the wherewithal to deliver these more sustainable city outcomes. In areas of research, top of priority is to understand concepts of liveability, aspirations of citizens, the broader range of social and environmental outcomes, different values of water. [...] because quite often you don't need technology. – Senior water manager F

As another interviewee put it:

Clearly in the non-metro sector, people are realizing the changes to irrigation efficiency are having these great social implications and that needs to be managed. You can't 'just do it.' You've got to recognize the impact it has on communities. So the industry's changing, the industry's recognizing that it's got to shift from an engineering and technical approach to a much broader approach that recognizes engineering and

technical efficiency but also recognizes what the human dynamic is, what the human impact is, and the interaction with people in terms of managing those impacts. – Senior policy analyst M

Water managers' decision-making processes are now giving more weight to community concerns:

Previously it was always the engineering section was the decision maker. Very rarely was it considered on what community expectations were. It was about having some high level standards, often public health ... and the idea was to deliver the most cost effective outcome to meet the standard. – Conservation manager B

We accept now we exist for the community. – Communications manager C2

I guess I take pride in it because we've just had a Board decision ... where we picked a servicing option that wasn't the most financially attractive to the company but actually delivered the better community solution. That's a radical moment. It takes a lot of work to actually get to that point. – Sustainability manager U

These changes in the orientation of the water industry have a number of implications for water experts working within the sector, and for researchers and research managers with interests and/or expertise in people, communities, cultures and societies.

2. Re-engineering engineers

One of the assumptions HASS researchers may make about engineers in the water industry is that they have a narrow technically-oriented approach to water issues and are mainly interested in *pipes, pumps and tankers* and not people. That assumption was proven erroneous in some interviews with engineers who attributed their interest in water to a concern with people. One city water manager explained how after farming and fishery work,

I then went back and did engineering, but I had always this desire to work for the community, for people, and that has pervaded my very existence from there on.

A semi-retired water planner recounted:

I was keen to be an engineer but I had strong social interests on the side of that; that was a personal thing rather than an educational thing. And ... I went into water because water was, as distinct from, say, structural engineering or construction or something, something that was very much dealing with public issues...

Engineers and scientists who become involved in new approaches may find current wisdom and practice at variance with their training:

I think [engineers] want their performance to be measurable in some way, and it's more difficult ... to measure their performance the further they go into the social realm. ... So the shift from supply side to demand side thinking is, of itself, a shift away from where they're confident, because they can really measure all their performance in supply side, whereas you're introducing that new X factor [with demand management]. – Engineering researcher

I did civil engineering, I studied how to get water off a hard surface into the bay as quickly as possible, so you build concrete channels and concrete pipes. Now fortunately people are being taught that the best thing is to hold the water in the catchment, is to hold it in the city. That's a huge change. – Senior water manager F

The landscape architects, the biologists, the hydrogeologists, the geologists, the chemical engineers, the civil engineers, and a mathematician, and I've got people from your profession, and they're all bolted together. ... They have me talking at their professional meetings. [...] They [microbiologists] want me to be the keynote speaker at a microbiological bloody conference. I'm a civil engineer! – Senior water manager V

This engineer surprised the interviewer by mentioning the spiritual significance of water early in the interview, and later explained:

It is my personal view that the relationship of water and communities should be developed at a level which enables a community to relate to water in a recreational, biodiverse and spiritual way, rather than the traditional assumption that water is a right of every individual from an ownership prospective. But in future that each individual understands the interrelationship of the consumption of this precious asset within communities, and should respect the communities from which the water is drawn.

The push for multidisciplinary, cross-sectoral and integrated approaches to urban water planning and services requires people capable of dealing with complexity with multiple, often unpredictable and sometimes intractable factors. Changes in training of water professionals, including the shift from 'pure' engineering to environmental engineering and environmental approaches, are enabling the industry to better deal with non-technological aspects of urban water systems. Several interviewees agreed that *systems thinking* was becoming more prevalent despite its challenges:

You've got to now do systems thinking. They're struggling just to get them [engineers] to work out where the road's going to go! Now to push about how that's going to affect the general community, and all these engineers go [groans]! – Engineering researcher/ educator R

We don't actually have an explicit curriculum piece that's called 'systems thinking,' for example, but our senior lecturer I call the 'walking integrator,' because [he] in fact did environmental science, he did a Diploma of Education, he did a Master of Education, and then he did a PhD in social science, so he is that walking integrator and, interestingly, I believe that the strongest hard science profession [into] the systems thinking is in fact the ecologists. –Engineering researcher/ educator H

*I did a Masters in Environmental Management and I think through that process, **Environmental Science degrees are intentionally broadened**, to look at the economics, the law, the social sciences.* – Research manager Q

Few water managers and planners seemed aware that a form of systems thinking initially developed in social studies of science and technology (see for example works by Bruno Latour) was also diffusing through the humanities and social sciences (Sofoulis 2009), where along with developments in human geography (Anderson and Braun 2008), it potentially provides a bridge across old disciplinary divides.

Meanwhile, those disciplinary differences are being eroded on the ground as water managers find new ways to respond to the challenge of becoming more socially sensitive and community oriented:

*I sat there the other day with one of my colleagues who's always been about community groups, and listening to what people think, and what does the community think...[the feeling was] 'Oh, Christ, more consultation!' And I finally **found I have a slight social conscience**, because I sat there and I said, 'Actually, I fully support what they're saying.' And all my engineers are going, 'What?' I'm going, 'No, I think you're absolutely right. We've got to go this way.' And it is starting to come across, time and time again, and it's working.* – Water planner D, former chemist

3. Social sustainability

The reorientation of the water industry represented by the *Cities of the Future* principles is a response to the complex challenges of climate change and represents a more thorough working-through of aspirations for sustainability. Getting beyond an emphasis on the economics of water pricing and markets, and past a preoccupation with the 'least cost' trade-offs between what was economically versus environmentally sustainable, the emergent concern with liveability recognises the inextricability of social dimensions from the environmental context and the diverse actions and transactions—including the economic—within urban systems.

As a way of finding out how water managers and planners generally understood those social dimensions, interviewees were asked how they understood 'social sustainability' or 'socially sustainable water management,' and its relevance to their organisation. Responses varied widely according to what kind of organisation was involved, the interviewee's role and background, and their experience with different kinds of projects.

One sustainability manager replied that *at the most superficial level, to me it means that the water utilities and the community effectively form a beneficial partnership in improving resource efficiency, so it's got a win-win feel to the design of it.*

A small number associated the term with contact with the public pursued through educational or behavioural change programs. Giving away show bags at the city show was seen as one of *many pathways in to build capacity, building the community – giving good quality information in a package that they can access and understand*; one respondent mentioned her department had undertaken *a significant project on behaviour change in the water sector*. Another noted that Brisbane's 'Target 140' [litres per capita per day] campaign *was around the community taking some sort of social responsibility ... for their water use*, while another mentioned that Melbourne's T155 campaign demonstrated that *there's a much greater realization about the role the individual has in managing sustainability and achieving sustainability*.

But what about where, as one communications manager put it, they had *sort of done behavioural change to death* and reached *a point where people sort of have changed their behaviours*? The sustainability of people's commitment to water conservation also needs to be addressed by responding to changes they have made:

But there is quite a large group of the community that are really saying, we've changed the way we value water and you're not reflecting that. You're not reflecting that in the projects that you do, you're not reflecting that in the communications that you do, in the stories you put out, in the way you engage with us, in the prices that you give us, all these different things. – Research manager Q

Many interviewees had broad concepts of social sustainability that concerned life satisfaction and community well-being:

... it's about quality of life issues from a inter-generational point of view. So it's about people having jobs, educational equity, not having to commute a long way, opportunities and support for people locally. All that infrastructure. - Research manager T

*To me it's about helping to maintain our way our life and community values and liveability and those sorts of things. 'Cause often trying to define what we mean by a 'social dimension' is pretty hard. [...] and 'liveability' is as hard to define as the social. [...] but I think it is about satisfaction – community well-being and satisfaction. [...] if we can help to influence people's overall happiness by **providing a safe and enjoyable environment** then that's part of it. - Policy analyst X*

The shift from the *old-fashioned ... engineering type* approach is most evident in planning, where conventionally *we go and work out a solution and then we involve them right at the end*. One water planner complained that despite acknowledging a social dimension, her department was still

*... more interested in that technical aspect [...]. So therefore they'll bring in **people at the end of a decision-making process**, rather than getting them involved at the start. Whereas my understanding of '**social**' is to **make sure that people are there right from the beginning** in that whole decision-making process, and so there's that knowledge-building as you're going along with it. I think they're gradually realising that they have to be more involved socially, but I'm not sure they know how to do that, at this stage. – Water planner E*

Another water planner and manager reflected on her scientific training:

'We're the experts. Here it is. You just use it.' [...] as you go through your career and your schooling, that's what you're taught. You're the expert. – Water planner D

But now, in an organisation committed to community engagement,

... instead of going out there with a plan to the community and saying, 'Look at all these pretty colours! This is what we're going to do!', we actually go out with nothing – just a piece of paper, almost. Obviously there's constraints. ... [e.g. position of roads, rail, etc.] But then basically you're working with the community to develop up their local plan.

However, a senior planner who had employed *participative* and *multiobjective* planning processes since the 1970s noted some limits to engagement, citing a community consultation about the effects of climate change on a city river, where the people were more interested in talking about access to the riverfront—a *riverfront that ultimately was going to go underwater but that was further off*. So, *the public process itself **can get you away from the big issues to the little issues of the day** as well.*

Despite the risk of such disappointments, many organisations within the sector are embracing these new community orientations, and continuing to seek the assistance of social researchers in doing so.

4. The importance of social research and community engagement

The growing concerns with the social sustainability of water servicing and adaptation options bring into sharp focus the need for water managers to understand social phenomena such as social and cultural norms of water consumption:

I would argue that anyone senior involved in water managing – it doesn't matter if it's managing storm water, rivers, waste water systems or drinking water supplies – you can't manage those effectively without taking into account the social norms and the social attitudes to the resource. [...] it's a contested area. There's a lot of interest groups. [...] Pity help people who don't take into account the views of their community and the social trends going forward because you'll just never get a project up. – Senior water manager G

But recognising the need for social research does not necessarily lead to its being conducted, especially if it might show that people are more willing to embrace innovation than providers are ready to deliver:

*There's an important role for social research. We probably don't do it enough [...] . I think we could actually avoid a lot of headaches if we had that better understanding. Sometimes I think it's a bit of a fear of saying 'we don't really want to know because it might make things more complicated'. It's like 'let's just ignore all that stuff and barrel along'. Which is probably why water professionals are conservative because **we don't want to know that the community is ready because it's easier if the community isn't ready.** – Policy analyst X*

One important distinction made by some, though not all, interviewees was between the kinds of research and topics associated with market research and campaigns for *behavioural change*, compared with the processes of community engagement. On the former, several mentioned a North American psychologist with inordinate influence, though not on everyone:

[He] started coming out to Australia ... and captured all these water companies. It was all about trying to conserve water, and how can you do it through a behaviour change program. So there was all sorts of models around on that. – Conservation manager B

Social marketing for behaviour change was irrelevant to this person's colleague in a related community engagement role, who stated:

*The sort of frameworks I use [based on International Association of Public Participation models] are around decision making and participatory democracy. Our approach is usually completely different so **we have a certain ethic around actually not influencing people**—rather giving them the information for them to make up their own minds about things. But it has different purposes—what I do, and what the social change / water conservation area does. – Engagement manager A*

These two interviewees worked in an organisation where marketing and behavioural change programs were separated from community engagement and conservation; this is not always the case. Market research was almost always contracted to external companies, while community engagement approaches often involved in-house staff. While there is overlap between these areas, and similar research techniques may be applied in both, there are

nonetheless distinctions to be made between research that attempts to extract information about or from people, versus engagement in co-learning and collaborative problem-solving:

*We are using research – I suppose **not even research now. We are working with the community** to develop up our [water planning] strategies, so what we're doing is, we're engaging and developing it with the community partners, so with representation from all our different peers, to industry, to schools, to social groups, the whole lot. Then we've built the strategy based on that. – Water planner D*

[O]ver the last decade there's been more and more evidence to suggest that doing things like community engagement saves money and saves time in projects. Like the DAD [Decide, Announce, Defend] approach and the PEP. We sort of talk about the PEP model – the profile, educate, participate. – Engagement manager A

In summary, emergent concerns with social sustainability (and more particularly, managing the risk of projects running aground through controversy), and well as new approaches to sharing responsibility for urban water planning and conservation and climate change adaptation, have alerted water managers to the importance of social research and community engagement processes. What is less clear is whether enough of it is being done, whether the differences between different forms of social research and modes of community engagement are well understood by water managers, and how well research findings are being translated into effective actions.

5. Topics and uses of social research

*We spend a lot of money on research and we do it for the very reason that we **need to listen** to what's important to the community. Otherwise, why would we do it? And people listen to it. It's actually compelling for us.* – Communications manager C1

Research topics with social dimensions of interest to water organisations range from mundane *nuts and bolts customer research and service issues*; perceptions of the environment, of water authorities, and of water facilities and services; affordability and willingness to pay; uptake of rebates and technologies; studies of knowledge, attitudes and behaviour (where various models prevail on the relations between these); language and generational issues, different lifestyles and values within society (segmentation studies).

Some topics gaining more attention are the relation between energy and water; the importance of place and heritage; engaging more cultural and linguistically diverse communities, and the liveable cities agenda: *future planning for a sustainable city, to meet growth and climate change and obviously potential drought*. A snapshot of the broader landscape of HASS sector water research is being produced for this project in the form of a directory of researchers and projects (due late February 2011).

Several reasons were given for conducting social research, most prominent of which was to find out what people think in order to **gain acceptance for proposed initiatives**:

*What's important for social factors for water is the fact we are going to have to come up with new ways of delivering water which involves people accepting different types of water, different types of solutions – local recycling, that sort of thing. [...] You can kill off a lot of great stuff if you're not really smart and sophisticated about **how you influence a community**. I think that's where some of the lessons from the professional marketing people, we should learn from them.* – Research manager T

Research was not always undertaken to find out something new – *we know generally the research is backing up our hunches anyway* – but it was useful to get evidence to back up arguments with government:

I've used research a number of times to help win an argument ...[with] government ... to get a decision reached and it's because it's been based on solid foundations. – Communications manager C2

While much research is done in order to help the water industry persuade the public to accept innovations, one interviewee suggested research was perhaps not undertaken in order to avoid challenging and overturning convenient assumptions:

... getting that better understanding about some of these areas where we do make assumptions about acceptability or rejection of alternate services. It's often laziness to say, we don't think people will accept this, let's not worry about it. – Policy analyst X

In X's view, *the risk around social research is thinking that we've done it all:*

*... **thinking that we have got the answers and then getting it horribly wrong!** An example would be if we sort of convince ourselves that everyone's ready and happy to drink recycled water and then we were to push for it on that basis, and get a **massive push-back** against it. You can lose a lot of credibility.*

Particularly valued were pieces of research that surprised water experts by revealing disparities between their own assumptions and views of the public, as in the following examples:

- *What we discovered—which I think we knew instinctively—was that our preferences as an organisation weren't the same preferences as the community. For instance at that stage, desal was the flavour of the moment internally. Externally it clearly wasn't.*
- *The community wanted much more aggressive targets on water conservation than what would have originally been in the plan before put forward – a finding also reported in different places for recycling and restrictions.*
- *In a land and water community consultation where the department proposed removal of a pine plantation, we also had to identify whether the pines had value. And for many people, they did! They actually saw them as trees that provided amenity [...] some community members saw them very differently to the way we saw it, as the water management. So it was very interesting.*

A note on outsourced versus in-house research

Although a number of water organisations employ research staff in scientific, technical and engineering areas, the convention is to outsource almost all social research. Market research was almost always contracted to external companies, and project managed by in-house staff, while community engagement approaches more often involved regular employees—even in one case, senior executives who were rostered to interface directly with the public at shopping centre stalls.

There are pros and cons to outsourcing social research. An obvious structural weakness of the arrangement is that organisations lacking in-house expertise in social research may be posing research questions on the basis of limited knowledge of social and cultural frameworks, and when the reports are back, may be lacking the critical expertise to properly evaluate them. On the other hand, one communications manager noted that:

*... the problem with having it all internally means that **you can get stuck in a rut and not move forward and not keep up with the different ways [...]** we have such excellent research companies [here] ... and we pick the best because we pick what we only need for the purpose. I would not want to see a whole market research department develop [in-house].*

The increasing emphasis on social sustainability and community engagement is prompting a few organisations to build their in-house expertise:

I've got great engineers and great waterway health experts, and great hydraulic engineers, and we recognise that we're probably a bit weak on the social, so we have a social scientist. - Water planner D

6. Social aspects of decentralised systems

There were a number of technical, regulatory and social issues raised around governance, health and water quality, proper and improper usage, effects on sewerage systems and land quality associated with decentralised, on-site or alternative water and sanitation services, but as these would be familiar from other sources, only a few threads are picked out here.

Who's ahead – is it the water industry and the engineers trying to get customers to accept these solutions or is it more responding to where the population is? It could be that the utilities are still very conservative and are behind the times in that sense. – Research manager T

This is an important question to ask, as most of the water managers and planners interviewed—even those espousing participatory planning models—seemed to assume that the water industry had the solutions, and would lead change by getting the community to adopt them.

This research manager echoes the views of policy analyst X, who speculated that sometimes social research was avoided because the water industry did not want to find out people were more prepared for change than they were, and who later also observed:

*...the phenomenon that's growing around people who are out there **tinkering away happily** on the weekends with their rain-water tanks and their irrigation systems and grey water systems, you build it all yourself from bits and pieces. I guess the thing from a government perspective is that if we are worried that this is getting out of control - **what's the consequences of it getting out of control?***

These on-site systems represent a loss of control from water authorities, but a gain of control for the backyard water manager:

Participant 1: *... a lot of people are taking their own **water supply security into their own hands**. And more or less saying we can't fully depend on the utilities because we've been through four or five years of quite harsh restrictions. So that's why you get people with their **rainwater tanks**, with their **grey water recycling**, and things like that. Even without the rebates,³ people are doing that. And I think that is a reaction to climate change*

Participant 2: *Well [...] rainwater tanks are emotionally quite strongly symbolic for people – even those people who don't have them – of being able to control.*

Enthusiasm is a concept that crops up in association with alternative supplies, not always positively:

Everyone's got their favourite water supply option, and they're very passionate about it, whether it be a rainwater tank or recycled water or storm water. They're all true believers whereas in actual fact it's a bit of everything ... - Senior water manager G

³ As another interviewee explained, a significant portion of people in that city who install rainwater tanks do not apply for the rebate, partly because of a circulating *urban myth* that rebate applicants will enter a government database of householders who might later be policed or charged for their collected water.

[T]here's quite a lot of what I would call 'uninformed enthusiasm' for rainwater tanks and grey water systems, which in ecological terms and financial terms are silly, particularly in a Mediterranean climate, where your tank's full when you don't need the water, and empty when you do, and the cost of that water's very high. – Sustainability manager W

Enthusiasm was a symptom to be investigated for this interviewee:

*This is a very strange thing going on with rainwater tanks whereby it's uneconomic. You wouldn't do it. [Yet] people are doing it. [...] And people in the water industry haven't really got their head around that yet. So from a social research angle I guess, what I believe should be happening in the industry is about exploring why. **And re-aligning these incentive programs, re-aligning the kinds of visions and messages that we've given to the community, [to] say 'we get what you're doing.'** To acknowledge it, to support that. Because rainwater tanks have such a great influence on the water system. – Research manager Q*

Instead of criticising tank installers for not behaving like economically rationalist engineers, interviewee Q seeks to understand the alternate logics revealed by such choices, and to translate this understanding into responses from water providers that respect and support people's efforts. This approach could be useful in respect to a range of decentralised service options.

7. Problems encountered – ‘What do we do on Monday?’

We do a lot of research and what we don't do well with it is analyse it and deliver it back into the business well enough in terms of how we use that research.

You're not Robinson Crusoe there. We're all guilty of [that] ...

This project was interested in finding out about any problems water managers had encountered in applying the results of social research. Problems of three main kinds were reported: those intrinsic to the research method; those to do with the different drivers of academic and corporate research; and those to do with translation and implementation.

Research methods

The well established practice of conducting large opinion surveys on randomly sampled individuals came under some criticism:

I quite disliked [their] style of research because [they] would actually go out and ask opinions of the uninformed, and I don't think that's particularly useful to the extent that you can detect what community attitudes are, but it does nothing toward shifting them in beneficial ways. – Sustainability manager W

Because research on water consumers has been almost entirely captured by behavioural, cognitive and social marketing psychology, rather than by theories of society, culture, and the meanings and practices of everyday life, there is often a huge gap between the research findings about attitudes and what water managers might do in practice:

...it's really easy in an issue such as that to go and do a market research study and say, this is what people told us. What I've struggled with is it's much rarer to actually get a good piece of research back that says, this is what it's told us, this is what we've learnt and this is how you can go about doing something. [...]

...we get some very good research back that says the best way to do that [bring about change] is to [...] engage people on a very one-on-one basis and to spend an hour with them and take them through the whole journey. I get that, I can understand that and I appreciate that. What no-one's ever been able to come back and give me is how do you take that model and apply it across South East Queensland where we've got 3 million residents. – Water manager P

The second point above picks up on a major problem in Australian government and corporate approaches to changing water use cultures: despite numerous pilot action research programs over two decades showing that one-on-one (or small group) and peer-facilitated interventions over a period of time are the most effective in producing enduring change, the fact that such approaches cannot be 'scaled up' into some one-size-fits-all mass campaign means that they are never pursued on a broad scale, leaving the field of action research on water littered with what one senior researcher described as *enough pilots to fly a squadron*.

Conflicting drivers

*You see, **academics are like a herd of cats in a way. They want to do their own thing and quite rightly so.** The people who pay the money want to focus them in one*

direction. [...] One thing is that it is just **quite hard to translate research into practice**.

The other problem is that lots of research is not translated into practice because it probably should never have been done in the first place! This is the thing when you get researchers pushing their view, and weak governance [of the organisation's research], and them getting money, lots of stuff is done which is just interesting and ends up in a report which goes nowhere.

*The other problem why translation doesn't happen even for valuable research is that the **researchers are not interested in that path**. The researchers like to do the research, write the papers and go to the conferences. The sort of transfer of technology into the business is not what they like doing. – Research manager T*

This interviewee is alert to a structural problem in research accounting that is experienced across most sectors of applied research in Australia. On the one hand, there is a competitive drive for academic researchers to enter research partnerships with the water industry, resulting in the tendency *for the research community to 'divide and conquer' because every single university thinks they know about water* and competes with others for research funding. On the other hand, in term of career advancement, academics are rewarded for publishing theoretical papers in ranked academic journals⁴, and any practical reports they write for external partners count for little – except indirectly as evidence of engagement.

Difficulties with implementation

The reliance on outsourced research, the mismatch between the individual psychology of marketing research and broader environmental, social and practical concerns, and the conflicting drivers of research for university-based and industry research all contribute to creating problems in turning the findings of social research into clear indicators for action:

*We can pay for research and then at the end of the day, people say, what do you want me to do? People use the language, '**What do I do on Monday?**' So they're the [projects] that are considered a flop where there isn't a direct outcome in an action to do. That's the hard part because it has to be fed into the paradigm of the organisation – actions, targets, dates, dollars. – Sustainability manager U*

Organisations with a strong science and engineering focus may have trouble making practical sense of the kinds of knowledge and recommendations made by social researchers, as this interviewee explains:

Generally speaking the history of the water industry is we have detailed reports with clear recommendations of action. Very clear and concise. The outcome of social research project is 'this is this', 'could be this', 'maybe this', 'I recommend doing another research project'. It does a disservice to the work you've already done. It might be a matter of editing – keep it to a language that the water industry is familiar with. Being more precise perhaps with recommendations. – Conservation manager B

The experienced government policy analyst X suggested that downsizing expectations is one way to cope:

⁴ As a further disincentive to Australian HASS and STEM researchers in water and water governance, the recent ERA exercise has downgraded the rankings of some respected interdisciplinary water journals to C, while journals in clear disciplinary fields hold the highest ranking A*.

*My view has been – when we've commissioned work – that we're hoping to get some information, some insights, but we're not expecting it to be the be all and end all. [...] **it's not the silver bullet, it's not going to answer every question.** And probably to go in a bit open-minded in that sense. [...] if you're going a bit sort of blinkered in a sense of saying, these are the questions, and the answers to these questions will solve all the problems of the world, then you're kidding yourself.*

In short, social research that goes beyond market surveys is still a relatively new and unfamiliar field for the water industry and the difficulties should not be underestimated. There are no guarantees that one-off research partnerships with academic researchers will produce the clear outcomes that water organisations would like. The problems of cross-sectoral and interdisciplinary research partnerships and tips for success will be addressed in the final report for this project. In the interim, we may ponder the insights of Rob Skinner *et al.* (2010, n.p.) on approaching the challenges of our times:

Achieving integrated solutions to complex problems will require **innovation**. Innovation is best achieved within a **collaborative environment**, whether within organisations, across the range of city stakeholders or globally. Encouraging people to **take risks** requires a supportive working environment where innovation is generously rewarded and recognised, and 'failure' is accepted as a possible consequence of innovation.

8. Translation – A key to success

*I have a sense that social research is important and that we've got to engage people in all of this stuff. **But it's making it relevant so that what you're doing is not just seen as another report.** – Research manager T*

*You need someone who can **communicate to both of you.** So, if you've got someone who's fairly wishy-washy, then forget it, because an engineer will dismiss them straight away. And I use 'engineer' – any scientist, really. – Water planner D*

*That's my learning in terms of the sustainability journey – is how you come up with a **common language or create a new language of engagement.** It's very much personal learning as much as organisational learning. – Sustainability manager U*

When asked for tips on overcoming the obstacles to successful social research on water, a number of interviewees gave answers about translation or finding a common language, and making research findings implementable into action (*What do I do on Monday?*). The disparity in forms of knowledge between the HASS and STEM sectors makes techniques of translation vital to the success of social research and engagement projects.

Although there were some hints about how the problems of translation into relevant action might be addressed procedurally or institutionally, it was notable how often particular individuals with special roles, talents or interests were identified—or identified themselves—as crucial to this process:

*.... as an individual, I like communicating, and that was my role as a planner. So, I became one of the people who were sort of the **interpreters**, if you like. Which is what I see my career as constituting. **Between science and decision-making.** [...] I don't think this is a self-serving statement but I don't think there are enough people who work in that domain. – Water planner C*

***It's that translation of that knowledge,** how they can communicate that – it's very difficult. [...] To translate from the engineers that I'm working with, how do I translate that to get out to the community, to local governments and the other stakeholders? – Water planner E*

Whereas these two interviewees were mediators between their own institutions and external agents (policymakers, communities), outsiders could also play a helpful role:

*The conversation that we're having you probably won't be able to have that with everyone in the business. **So what's the conduit?** So she'd be the conduit, the conversation. – Sustainability manager U speaking of a particularly effective 'translator' consultant*

Research manager T had got his former organisation (a water utility) to create jobs for people these integrating and translating capacities:

*So what you do is you put these project managers in there who work with them [academic researchers], who can talk their language, understand what makes them tick, but also understand what makes their paymasters tick, what the utilities want. So they're **a special kind of professional research manager.** [...] And more and more the capability of these kind of project managers is being recognized as really important. [...] ... they tend to be people who come from a technical background and*

are a bit tired of playing with test-tubes. They want to engage more broadly but they want to influence more broadly.

Interviewee T suggested that the end-users of research participate in framing it: *involve the users of the research, or business managers as part of the project team, so that you customize the output so it's directly applicable.* He observed with approval the industry's growing resistance to funding projects devised solely by academic researchers: *what's happening now is the utilities are taking the lead and saying, 'This is what we need from a strategic point of view.'*

One of these *special kinds of professional research managers* from a different city was Q, trained in environmental management and interested in social research, who had adopted a particular way of making the research consultants he commissions more attuned to the applicability of their work, posing a version of the *Monday* question:

I very much stress that we need to really understand why you're doing this work and what you're going to do with it afterwards. Don't get hung up about the methodology and what question you're going to ask, and how reliable that is and population sizes— I'm really interested in a lot more about why you want to do it and what are you going to do with it afterwards. [...]

That means a compromise for the research because it means you've got to present it in a really simplistic way – 'What does it really mean?' 'What do you want us to do?', 'What should we do?' [...] But isn't that better than having a well researched and internationally recognized piece of data that sits on the shelf? I think that's really important – that it's got to be used, or what is the value in it?

The indications are clear that any efforts of individual water managers and planners, researchers, research managers and institutions to find ways of translating ideas, concerns, priorities and findings from one domain of interest or knowledge community to another are likely to contribute to the success of social research and community engagement projects. It is also evident, however, that the need for those translation efforts is all the greater due to the outsourcing of most of the water industry's social research.

On the surface, it seems a very reasonable demand that social researchers produce findings that are aligned with corporate strategic objectives and translatable into clear indicators of 'what to do on Monday.' Social researchers could certainly try harder to translate their ideas into simpler and more relevant forms. One can perhaps sympathise with those water organisations who feel they've been taken on a ride to nowhere by hordes of researchers and consultants competing for funds from the same limited pot. However this neglects the power relations involved, especially as seen from the researcher's position at the margins of powerful water technocracies, as part of an over-stocked pool of temporary research labour that is by definition not part of the water industry's core business, and expected to pursue research questions formulated by water experts who are not always up with current HASS research paradigms.

Arguably, this relationship is seriously flawed due to unrealistic expectations: the water industry keeps the social researchers outside, yet expects them to produce insider-quality knowledge. No wonder, as one research manager observed, *they hire people who are more in their own image.* Hiring or cultivating professional mediators and translators is one necessary response to this situation; building more in-house social research capacity might be another.

9. Facilitating change

*Every person has a way of influencing their water consumption and influencing how water is dealt with in the community. So really **water is the Trojan horse into more sustainable cities** in terms of public and social perception and support. - Senior water manager F*

The water industry in the twenty-first century is not only in the business of coping with change: it is also involved in making change happen. Many water managers acknowledge that their tasks have been made easier by the growth of general community and media awareness around water supplies, drought and climate change. Greater involvement in community engagement and consultation has come about not just because water managers wanted it, but because communities have demanded it.

Much government and industry interest in social research is related to questions about the management of perceptions and attitudes, and finding out what messages can appeal to which attitudes and drivers to produce behavioural change—or at least raised awareness—in which population segments. As one policy analyst found who was involved in Melbourne's *T155* campaign (for reducing average per capita consumption by about 100 litres to 155 per person per day):

It raised awareness in that people started to look at what they were actually consuming. So while it wasn't a fix as such, it raised awareness, gave people some idea of the parameters of what might have been a good or bad water use. And it was giving them the opportunity to use that water any way they liked.

Only one interviewee—a colleague in the same department—raised critical questions about the totalitarian tendencies implicit in such efforts to produce behavioural conformity within what was supposedly a liberal democracy.

Although the model of facilitating change by raising awareness or changing attitudes to prompt behavioural change was widely prevalent, water managers recognised that many things could prompt change:

*The drought was really good in Queensland to shift people's mindset about, 'This is actually happening. We don't have water. This is an emergency situation.' I think people really just re-evaluated their lives and looked at what they could do, whether it was saving water, saving energy. [...]...dinner conversations, **barbeque conversations** when it wasn't raining were around how full your rainwater tank was. - Water planner D*

The relative lack of social and cultural models of change in the water industry meant that *barbeque chats* or *taxi cab* conversations could become stand-ins for those sites of informal social interaction where popular knowledges are circulated and renegotiated to facilitate both personal and cultural change:

*It wasn't actually that [media campaign Target 140 litres per person per day] that made it happen, it was **barbeque chats**. [...] One of the best resources we had in the demand management Target 140 space were **cab drivers** who spoke to people as soon as they landed in Brisbane about water management. [...] those bits of information and people highlighted [that] these are all considerations. It's how do you package that together into a program? - Water manager P*

That last question seems to imply an impossible ambition to somehow control informal social interactions. Better models are available of social learning and cultural change to bring about changes in practice, for example in fields such as cultural studies, public health or development studies.

The experience of drought and subsequent attunement to issues of water and climate change, along with experiences of tinkering with on-site water systems, allow water to have a *Trojan horse* effect on urban sustainability. With their enthusiasms, spiritual connections to water, desires to control, insecurities and instinctual cravings for water, people who become sensitive to this vital element can go on to address other domains of sustainability and adaptation.

The consultant who was a *conduit, a conversation* played an important role in introducing one Victorian water utility to a social learning model:

*We suddenly realized, OK there's a different way of doing things. She was saying, look you use a marketing model where you come up with a solution and you're so excited by the solution and you just go out and present people with the end – the learning that you've come out with. But think about how you learn and it doesn't happen that way. Think about how you learn and how you change. Well if you went to the **learning model**, you'd actually **spend time with people and take them through the same process that you went through to bring about change**. And you're at the point where you should be thinking about that – water conservation, behavioural change. – Sustainability manager U*

This same organisation took an unusual approach to rolling out its corporate sustainability program when it *bridged the head and the heart*, by complementing a paper written *in terms of the science and the logic* with an *emotive, lovely piece of work that described the reason why we had to change*:

[Y]ou have to be doing something that everyone thinks makes sense, and it has a value base, and then it's bottom up. So we put a lot of effort in terms of environmental education and training to say, this is why we're doing it. So everyone's empowered because they know 'why' and they believe it and then when they see opportunities they'll [...] see what they can do.

With some exceptions, there is a big gap between peoples' intuitive grasp of the importance of everyday social interactions as part of broader change processes, and the vocabulary and frameworks needed to address this dimension. One promising development that might help span that gap is the NCCARF project on the Water Governance Research Initiative currently underway with Phil Wallis and Ray Ison (both of Monash University) and Lee Godden (Melbourne University) and colleagues, which explicitly adopts a social learning framework:

We suggest that *social learning* – learning processes among a group of people who seek to improve a common situation and take action collectively – is a critical missing element in the current water reforms. We emphasise the pressing need to work out how to design social learning into existing *institutional arrangements*, which span policies and objectives, laws, rules, regulations, organisations, policy mechanisms, and norms, traditions, practices and customs. (Ison and Godden 2010)

10. Future social research

The embrace of the *Cities of the Future* agenda by the Australian water industry has many implications for social research and researchers, including the topics of research, research

methods and approaches, the relations between research, engagement and intervention, and relations between researchers and the institutions funding projects.

Information infrastructure

One finding of this project—arising from interviews as well as contributions to the research directory being compiled—is that if social research is to become better integrated with, and more accessible to the water industry and government agencies, there needs to be improved data infrastructures, such as guides or directories of researchers, or databases or repositories of research reports and papers:

*... there's a big issue that the water research [needs to be] – landscaped, if you like. It's very confusing knowing who does what: where are the centres of excellence? **Who are the people that know stuff?** [...] Often the utilities want to get some research done and they're not quite sure who should they go to... - Research manager T*

*You know, in engineering areas we have centres of excellence where you can go and talk about desalination or recycling or whatever. I think **we need a centre of excellence for social science.** Perhaps resources, broader than water, perhaps energy, anything else that there is. To actually go through and provide that rigour. And we can have a repository of all the studies that go on around the country. – Conservation manager B*

Compared to research on water in the engineering and biophysical science areas, which is well serviced by disciplinary and professional organisations and journals, funded research networks, professionally organised databases and substantial repositories of research, social researchers on water have almost none of these amenities, networks, or repositories.⁵ This would seem to be another consequence of the field of social research on water being structurally positioned as marginal and non-essential to the industry it is allied with. It also reflects conventional differences between STEM and HASS sectors in the degree of collaboration and sharing of research, the different models of authorship and knowledge, and vast differences in research funding allocations across those sectors.

Methodological challenges

One of the **methodological challenges** associated with a shift from an engineering and environmental perspective towards one that includes social sustainability is to develop greater appreciation of the many kinds of diversity that exist within society, a diversity that has long been submerged by the water managers' emphasis on *averages* – the mythical figure of the 'average user' and their calculated average daily consumption, which form the basis of campaigns like *Target 140* and *T155*:

*One of the underlying things which hasn't happened as much as it needs to happen – **to get away from this attitude that people are average, that everyone's the same.** And **there's a hell of a lot of diversity out there** and you need to recognize that diversity and appropriately manage that diversity. Now we haven't conquered that one yet but at least we've got lots of people starting to think about that.*

There's a need to recognize that that [diversity, e.g. of 'cleanliness drivers'] exists – and there's a need to recognize and provide the freedom that that exists – because

⁵ One important exception is the Household Water Use Researchers Network, started by Kate Harriden (ANU) and Michelle Greymore and run almost entirely on a voluntary basis.

after all this isn't a totalitarian regime. But it isn't adequately considered within the way we think of the numerics around water. – Senior policy analyst M

When it was suggested that even some water corporations had tired of 'averages' interviewee M responded:

Well, some yes, most no I think. I still think they like to do that [simplify things down]. Politicians like that as well.

New tasks for social researchers

The emergent integrated approach will mean **new tasks for social researchers**. The following speculations on future developments captures some of the tensions between conventional and emergent approaches from a water industry viewpoint:

*There will be more of an integrative servicing approach, where you have this_Cities of the Future or water sensitive cities concept, and education of the community about the benefits of why ... new technologies are being introduced. This possibly could have a role for social researchers—almost that interface between utilities or technology providers and customers, to help facilitate that change. [...] **managing expectations about what adaptation options we might put in place.** ... what it will mean for them.*

*It will be about **taking people on the journey with us.** – Sustainability research managers J and K*

Here the utility is still pictured as the powerful and knowledgeable provider, leading the *customers* and *community* and *managing expectations*. However there is a stronger sense of partnership, for while *taking people on the journey with us* positions the utility as the senior partner, it also conveys a tacit sense of social learning and respect for change as something to be *facilitated*, rather than demanded or enforced, as in conventional behavioural change approaches and campaigns like *Target 140* and *T155*.

In parallel with this journey is the one to be taken by water managers and planners, for whom the path towards integrated solutions will mean more involvement with HASS researchers:

*as the industry goes down the [path of] more integrated solutions ... it **will need a deeper understanding of the social elements** that social researchers will be brought on board. [...] As they get used to that [...] they'll feel more comfortable. **So you need to think about this as an incremental thing, step by step, the door's been opened now, we're at the table with all these engineers, now we've got to convince them you've got value to add.** – Research manager T*

*So I think the industry is well behind the need to engage strongly with the community, and you can't do that if your whole water supply and sewerage department is full of engineers and scientists. I think it's not even a research issue. I think **our organisations need to be well-populated with political scientists and social scientists** and whatever else to reflect better their customer base. – Researcher/manager H*

Conclusion

This research aimed to take a snapshot of the water sector's current engagement with HASS sector research and the social dimensions of urban water management. The picture emerging is of an industry undergoing many transitions, notably from its preoccupations with engineering and public health, to becoming economically and environmentally responsible, and more recently socially engaged and climate-adaptive.

The water managers and planners interviewed for this research were those who were willing to talk to a cultural researcher about social aspects of urban water, so it is unsurprising they were generally positive about the importance and value of social research to urban water management. However, conversational hints about resistance to this reorientation from within their organisations or professions, and the widespread reliance on external expertise in social research, indicate there is some way to go before the water sector's aspirations to address social dimensions (e.g. *Cities of the Future* principles) are firmly realised in organisational and collaborative structures that reflect the importance of this pillar of sustainability.

A need to gain public acceptance of the servicing solutions and facilities proposed by governments and industry is the overarching reason water managers give for addressing social dimensions. But there is a wide spectrum of understandings about what processes best secure societal acceptance, ranging from market research and media campaigns to produce behavioural change, to managing controversy around announced solutions (the DAD – Decide-Announce-Defend formula), through to participatory planning and social learning approaches where communities and stakeholders help formulate the initial problems as well as the solutions. The differences between these are not always well understood.

There were sometimes difficulties in aligning (outsourced) social research questions and findings with an organisation's strategic objectives and activities, though there were examples of special individuals, changes in professional training, and procedures that could facilitate the translation of knowledge between different contexts, frameworks, sectors and communities, and could enable more effective pursuit of cross-sectoral and interdisciplinary approaches to tackling complex twenty-first century problems.

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