TAPPING INTO OUR BIGGEST RESOURCE: ENGAGING WITH THE COMMUNITY IN WATER QUALITY OBJECTIVE SETTING AND WSUD PLANNING

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Abstract

Much of the capacity building, education and research in Water Sensitive Urban Design (WSUD) to date have been targeted at professionals working in local government, state government agencies and consultancies. While this has been necessary and very useful at understanding and supporting the uptake of WSUD by these groups, there is some danger in focussing our future WSUD planning, designs and implementation around such a concentrated "professional" view of the world as to date it has often involved "second guessing" what the communities goals or aspirations for their waterways might be. This paper will discuss the importance of ensuring communities are involved in many aspects of WSUD. It will also outline two case studies on community engagement in WSUD and water quality improvement that have been undertaken at different scales recently in the Botany Bay Catchment in Sydney, Australia.

Introduction

If our aim is to try to move towards a "water sensitive city" as has been well documented by Brown and Clarke (2007) then many changes will need to be made within the professional disciplines, governments, and private organisations that impact on WSUD. A great deal of work has been done to date on institutional change management processes (Brown and Ryan 2001, Morison and Brown 2007), capacity building (Brown et. al. 2005, Dahlenburg 2004 & 2006, Keath and White 2006) and other mechanisms to support the introduction of WSUD. While these issues are very important and the research has helped improve our understanding of the difficulties associated with introducing new "technologies" to certain professionals and organisations, and how to better support this process, it appears that very little research on how to engage with and support our communities in the area of WSUD at a precinct or lot scale has been done to date (Morison and Brown, submitted).

This is understandable as it is important to "test" any new technology and gain support from higher level professionals and organisations first as they are often also the same groups who will play a future role in introducing, engaging and supporting communities with this new way of doing things. Clearly they will be reluctant to advocate and support something they have not tested and feel comfortable with, so it is important to raise their awareness, build their capacity, and have their support first.

It appears that key organisations and professions are now beginning to reach a level of maturity and support for WSUD, which could allow us to begin to interact and involve the

community meaningfully in many aspects of WSUD. This will be important because in most cases our ultimate aims or goals are to: improve water quality, reduce water use, improve amenity, make our waterways more socially inviting, protect ecosystems and their functions etc. for our communities. It is therefore vital that we allow them to be part of the decision making processes rather than just presenting them with "professionally derived" solutions to be implemented. To date much of our community "involvement" has centred on professionals developing solutions and "educating" the community. Another way of putting this could be trying to convince or cajole them that this is how they should do things or "how they should see the world". Until recently it appears that much of the interactions with communities has been from a "trust us, we know best" attitude that has had limited success at dealing with complex problems. These ways of interacting with our communities really undervalues the great local and life knowledge that they can bring to the table. Interactions by organisations and professionals with our communities need to be broadened and started earlier (rather than when a "solution" has been found), made more collaborative, and allow the community to influence and participate in deriving locally appropriate solutions. This, of course, will require changes to be made to our current engagement, planning and design practices, but could lead to more accepted and robust outcomes as the case studies below illustrate.

Case Studies

Community Involvement in Environmental Values and Water Quality Improvement at the Catchment Scale (Botany Bay Catchment)

The Botany Bay Coastal Catchments Initiative (BBCCI) is seeking to achieve long-term protection of the surface waters of Botany Bay, its estuaries, and its catchment. A key product of the initiative is a scientifically-derived ecological response model of Botany Bay and its estuaries that can be used to model the impacts that changes in the catchment will have on the Bay's ecological communities. The initiative is primarily focused on tackling the main pollutants washing off the hard surfaces in the catchment (suspended solids, nitrogen, and phosphorus).

The initiative has engaged with councils, key stakeholders and the community in the Botany Bay Catchment so they could participate in finding and implementing innovative solutions to improve water quality. The environmental values workshops and questionnaire results detailed in this case study are examples of this engagement process. The BBCCI is majority-funded by the Australian Government and is project managed and part funded by the Sydney Metropolitan Catchment Management Authority.

A series of 18 workshops were held throughout the Botany Bay Catchment from September 2007 to March 2008, which were designed to seek their opinions on the catchment environmental values via a survey questionnaire (first part of the workshop). The second part of the workshops involved: participants detailing their preferred future management goals for sub-catchment areas (26 in total), setting future levels of aquatic ecosystem protection and water quality objectives for these areas. They did this for sub-catchment areas that they lived in, had some knowledge of and/or an affinity with. In all, around 140 people participated in the workshops with 99 people completing and submitting the environmental values questionnaires.

The environmental values questionnaire contained the following 6 questions;
Q1: What activities have you done in our waterways in the past 5 year period?
Q2: What aspect or activities are you concerned about losing from our waterways?
Q3: What do you appreciate most about the waterways?
Q4: What do you see are the key threats to water quality in our waterways?
Q5: How would you like to be able to use the waterways in the future?
Q6: What are your ideas to better manage our waterways?

This questionnaire was based on one developed for the Great Lakes Coastal Catchments Initiative in NSW and was designed to gain a greater understanding of how the community in the catchment valued their waterways. It was also a warm-up exercise for part 2 of the workshop that involved water quality objective and future management goal setting. The questionnaire involved both structured questions with the options for free text answers. The latter were analysed and grouped accordingly.

Selected results from the questionnaire, namely questions 2 and 6, are presented and discussed below. The full report with all results and discussion on each question can be downloaded from www.sydney.cma.nsw.gov.au/bbcci

Table 1 *Top 10 responses to Q2 "What aspect or activities are you concerned about losing from our waterways?" (Sydney Metropolitan Catchment Management Authority 2008)*

Top 10 Responses to Q 2 Aspect/Activity	Total	% Response
Water quality	86	87%
Loss of native vegetation	77	78%
Loss of local biodiversity	75	76%
Reduction of native wildlife	74	75%
Scenic beauty and amenity	70	71%
Natural balance of the environment	67	68%
Riparian vegetation	62	63%
Quiet/peaceful public open space	59	60%
Swimming	57	58%
Recreational fishing	35	35%

Considering the small sample size (99) of the questionnaire relative to the number of people living within this catchment (more than 1 million), these results need to be viewed with some caution and be treated as indicative at best. Nevertheless, it is interesting to note that when asked about aspects or activities that people were concerned about losing in the waterways of the Botany Bay catchment (Table 1), the top 7 things listed reflected a concern for nature or ecological systems and that these things scored much higher than more anthropocentric activities like swimming or fishing. This really seems to highlight the importance people are placing on connection with natural systems in this urbanised environment and the almost "reverent" or nurturing role the natural environment can play in harsh and sometimes alienating urban environments. These responses might indicate a tenuous connection back to a past when we lived as part of nature rather than trying to dominate or control it. For us, it is heartening because it seems to indicate a more connected community that is beginning to

transcend the more dualistic city states (water supply, sewered and drained) outlined by Brown et al. 2009 and shown in Figure 2.

Table 2 *Top 10 responses to Q6 "What are your ideas to better manage our waterways?" (Sydney Metropolitan Catchment Management Authority 2008)*

Top 10 Responses to Q 6 Activity	Total	% Response
Incorporate water quality strategies and targets into local planning controls	84	85%
Reasonable pollution limits enforced	79	80%
Incorporate water quality strategies and targets into state planning controls	79	80%
Stricter controls required on effluent	75	76%
Education of the general community	74	75%
Better Coordination in existing authorities	73	74%
Stricter controls required on industry	70	71%
Water Sensitive Urban Design	70	71%
Stricter controls required on development	69	70%
Increased monitoring and reporting	68	69%

The responses to question 6 above show that in the Botany Bay catchment that there is a feeling among respondents that legislative controls of the impacts of urban development on our waterways is at present inadequate and fragmented. It is really only "education of the general community" that is not a "control" type activity. Even WSUD, which ranks eighth, is a quasi "control" as generally in Sydney at present it is implemented through planning policy and controls.

The full report on the questionnaire mentioned above can be downloaded from www.sydney.cma.nsw.gov.au/bbcci

Community Involvement in Visioning and Water Quality Improvement at the Local Scale (Cooks River)

For a number of years in the Cooks River Catchment, which is also within the Botany Bay Catchment, Marrickville Council and more recently the Cooks River Sustainability Initiative have pioneered a novel WSUD community engagement and involvement process. They have concentrated their involvement around small sub-catchments that range in size from 72 up to about 417 hectares. To date six of these small sub-catchments have been engaged in WSUD planning processes with several more planned for later this year.

These local engagement processes have typically involved characterising each local catchment and gathering data for a booklet that can aid the community and those involved in the process. Each booklet includes:

- an introduction, background and how the booklet can be used,
- a map showing current water balance for the sub-catchment (rainfall, potable water, wastewater, stormwater, infiltration and evapotranspiration etc.)
- an additional map showing the water balance for 2050 for participants to fill out,
- the history of the area (usually in a timeline),

- a land use map a graphs (number of dwellings, types of housing, zones, significant parks, business areas, and other infrastructure),
- data on catchment imperviousness and modelled pollutant loads (TSS, TP, TN and Gross Pollutants),
- a map showing identified hotspots (litter, illegal dumping, water pooling, localised flooding, etc),
- social characteristics (population and their backgrounds, household types, age distribution, income, education, employment), and
- organisations and community groups operating in the area

This material is then used to help facilitate a community visioning session (2050 has been used as the future point in this case) for the sub-catchment. Once a vision is developed by the community another session is held to work out how the vision might be realised, which typically involves the community looking at acceptable options and practical solutions that can be put in place in the sub-catchment. This also usually includes suggestions from the community about types and locations of WSUD devices.

By running this more inclusive community engagement process these organisations have been able to tap into the wealth of local knowledge that exists in these areas, particularly historical practices and earlier approaches that have been tried in their areas.

The first of these engagement processes run in Marrickville resulted in the development of a masterplan for the sub-catchment being prepared. Many of the solutions derived with the community have now been constructed and volunteer groups are now helping maintain these assets with the support of Marrickville Council.

More information on these localised sub-catchment examples of community involvement can be found at:
www.marrickville.nsw.gov.au/environment/water/sustainablewaterplanning.htm
www.ourriver.com.au/cooks-river/

Summary

The two case studies above show that communities can be involved in WSUD planning, design and/or implementation at the catchment and local scales, and their input can help in our decision making processes at an organisational level. It is also worth remembering that engaging and partnering with communities in a more equitable and holistic manner can be difficult. We realise that for years organisations have been presenting the community with solutions or at times actively discouraging the community from being involved in finding solutions to local waterway problems (Schneider and Ingram 1997). It is then understandable that “re-engaging” with the community in a new more honest and equitable manner will take some time to gain their trust so they can see the benefits of being part of the solution rather being seen as the problem.

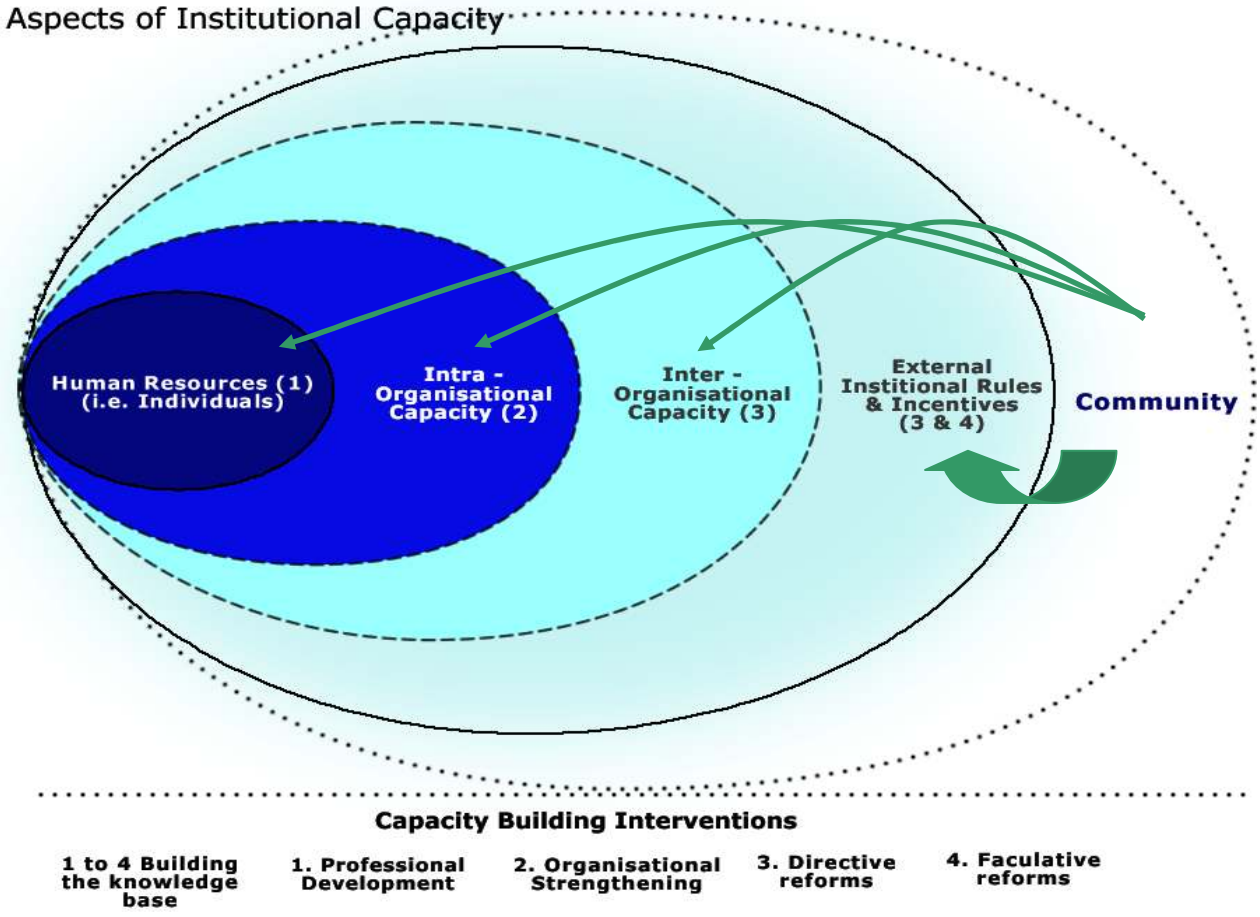
Discussion

It is important to explore the interplay between professionals and organisations operating in the WSUD sphere and the communities that they operate within and relate this back to some

of the literature relating to this aspect of WSUD. Fig 1 below is an adaptation of a graphic that shows aspects of institutional capacity that normally just includes capacity building interventions relating to organisations, governments and professional individuals within those organisations. The sizing of the arrows in Fig 1 is our interpretation of the "amount" or importance community influence might have on these capacity building interventions.

These interventions would appear to sit within a wider sphere – that being the community – which is the enabler or driver for these interventions. It is our view that the community also influence many of the operators and must play a particularly important enabling role in the areas of directive and facultative reform. Without community support, most governments will be reluctant to be involved in the reform process. It is also worth remembering individuals operate in their professional roles, but are also part of the community and will be influenced by their own beliefs, networks and interactions at a community level that may not always align with their "professional personas".

Fig1. *Aspects of institutional capacity showing community interactions and influence on capacity building interventions (adapted from (Brown et al. 2006))*

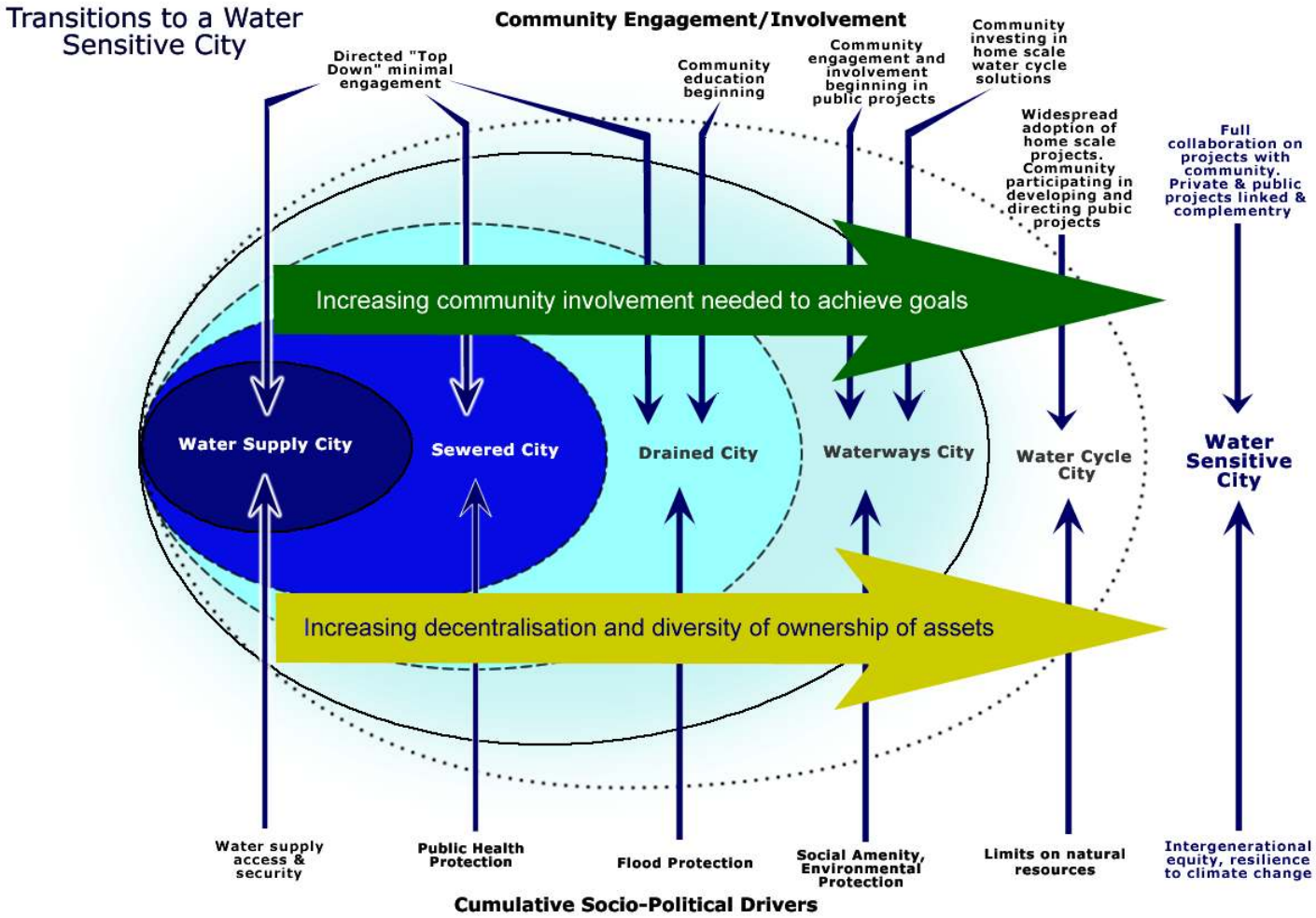


It is also important to explore the role that the community has had in enabling WSUD as well as how they will be necessary to facilitate the transition to a "Water Sensitive City". As Brown and Clarke (2007) have outlined very admirably in *Transition to Water Sensitive Urban Design: The Story of Melbourne, Australia*, two of the key drivers beginning this transition were the community with their agitation and concern in relation to a problem (in this case water quality), and consequently because of their interest, the media.

The story of Sydney is not a dissimilar tale to that of Melbourne. According to McManus (2001), the change in focus to waterways health has been driven by general community concern over pollution to Sydney Harbour, combined with a greater understanding of contribution of stormwater to water quality in Sydney Harbour. He identified six specific drivers for these changes:

1. Public health warnings and closure of harbour beaches after rainfall.
2. International attention being focused on Sydney Harbour in preparation for the 2000 Olympics.
3. Harbour pollution generating regular prominent articles in local papers.
4. The establishment of a high profile Waterways Advisory Panel to review proposals to improve water quality in the Harbour.
5. Sydney Water's proposal for the construction of the 20-kilometre tunnel to intercept sewer overflows.
6. Community awareness and education campaigns on water quality.

Fig 2 *Transitions to a water sensitive city showing possible community involvement (adapted from Brown et al. (2009))*



Brown (2009) has provided a diagrammatic representation of the possible stages or transitions a city could go through to become a more sustainable and water sensitive city. We have used this as a basis for exploring the community's involvement or engagement with these various transition states.

It appears that the early transitions from water supply, sewered, and drained city involved more of a directed top down approach with the community where organisations were very powerful and carried out their activities under government direction for health or flooding reasons on behalf of, or for, the community. It was only recently in the later stages of the drained city transition phase (which most cities are probably still in) that communities began to question this centralised and directed operational model. This seemed to elicit a range of responses from the organisations being "questioned" by the community, the main one of which was to frame their messages or directives in an educational context. But this was mostly unidirectional and little scope was given for real community input into decision making processes. The benefit of this closer interact with communities was that it allowed the community to show their frustration at not being more involved or more commonly at their dissatisfaction with the "solution" presented to them. Those organisations with enough foresight and willing to listen and take onboard the communities' concerns and try to address them have been those at the forefront of involving communities in WSUD decision making processes. The excellent work being done by Marrickville Council is a good example of how this might be achieved in a local context.

What this experience highlights is that as we transition – and possibly the only way we can – towards a water sensitive city, the more involved our communities will need to be in many aspects of the change process. Without their support we are unlikely to achieve the goal of developing a water sensitive city. This is because the community are the key drivers to political decision making that will be required to bring about the legislative changes needed. It is also important to keep in mind that as we have transitioned so far we have gone from very centralised systems or approaches to those that will need to more distributed and decentralised. This will also require ownership of these assets to become more decentralised. To date many of the WSUD interventions introduced in cities have been in public spaces with ownership by councils and in some cases body corporate. If we are to continue "downscaling" our approach then our next step must be to involve our communities in both seeking solutions in the public domain as well as the private domain. It is only when the WSUD effort at all scales (centralised, precinct, local and lot) is integrated and complementary that we are likely to be close to living in a more sustainable, water sensitive city.

Conclusion

By not involving our communities more openly in our WSUD planning and development processes we run the risk of alienating them or providing "solutions" that become unwanted and unsupported by the community or, worse still, have them use their political power to undermine WSUD.

In the end, without community support, much of the benefits of WSUD will not be realised and we will not be able to achieve our goal of having more sustainable water sensitive cities. The case studies above and other similar community involvement processes being tried in

other parts of Australia offer some great starting points for further research and to improve on them so that we can "reconnect" our cities to their communities and the organisations charged with managing waterways and natural systems.

It is also important to remember that the community were the key drivers in highlighting water quality problems that enabled WSUD to emerge as a solution. It is therefore imperative that we return to the community to close the loop and show them how together we can use WSUD as a solution to the problem(s) they highlighted many years ago.

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